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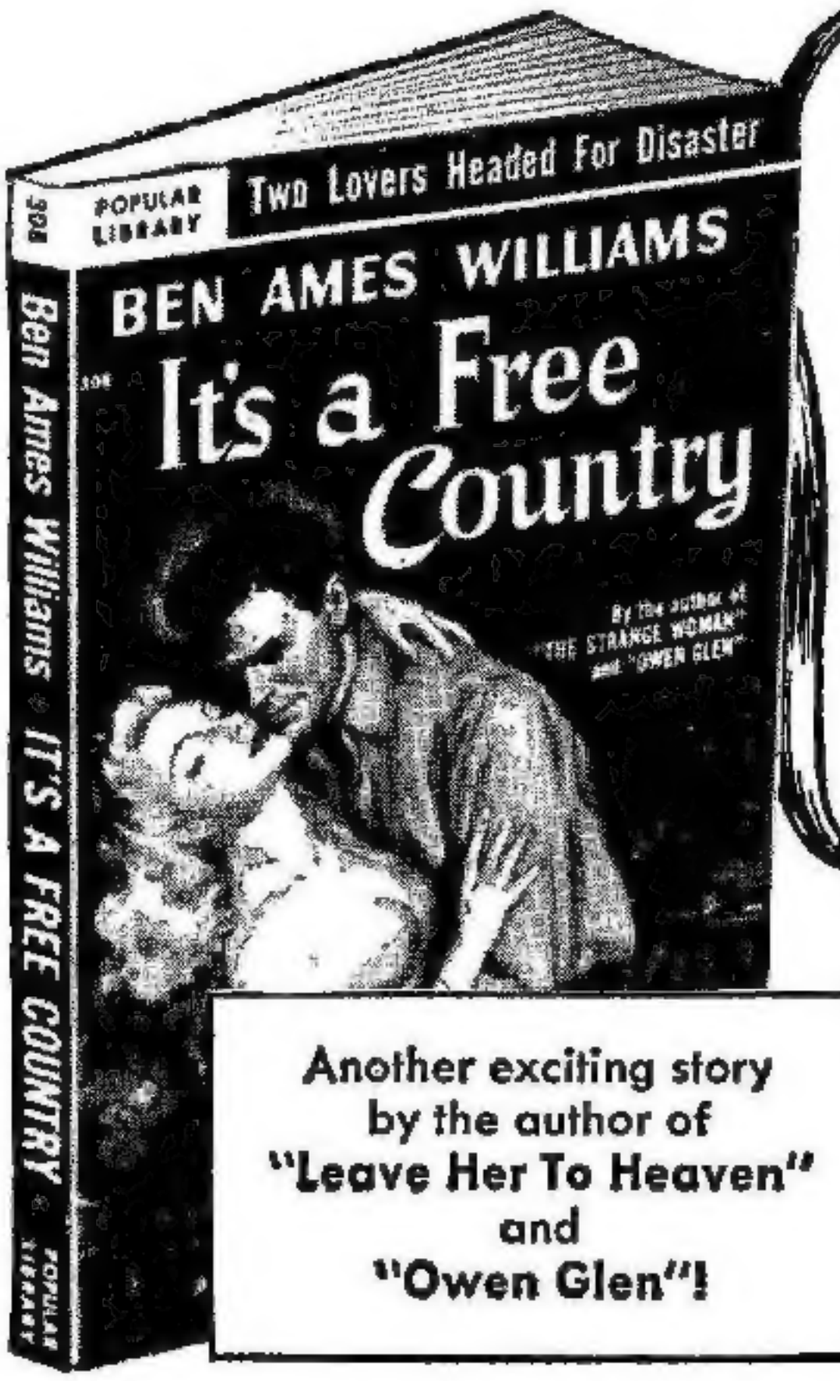
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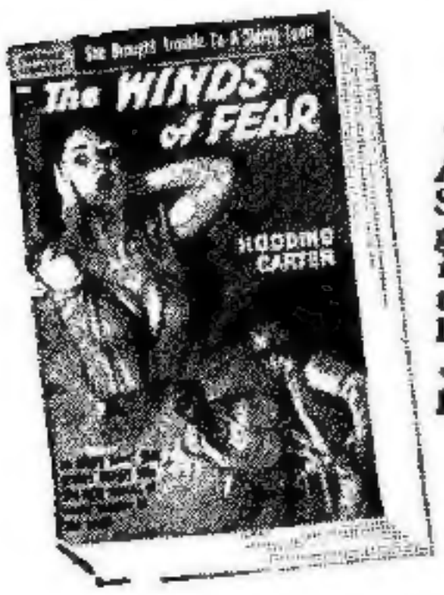

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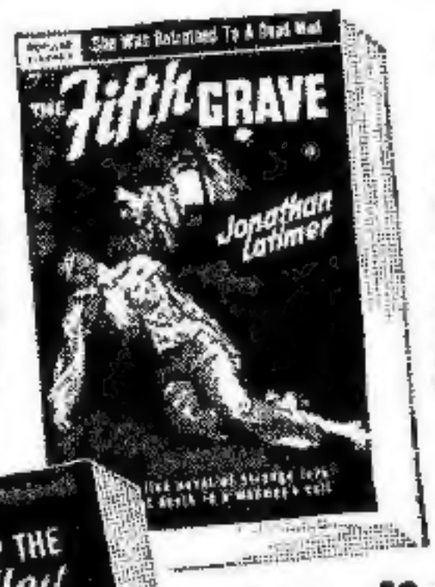

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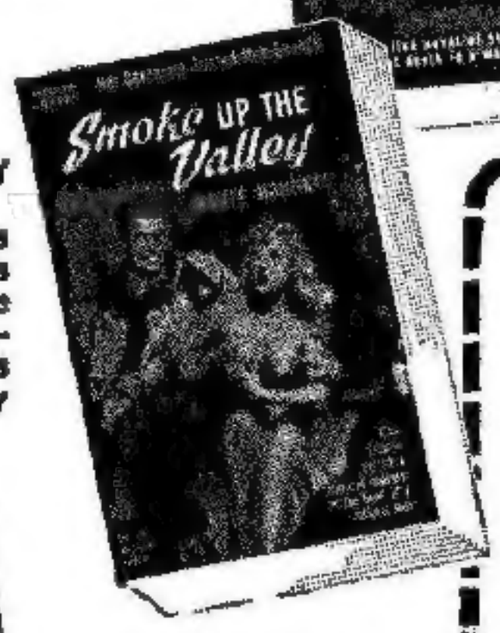

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Where science fiction readers and the editor talk matters over

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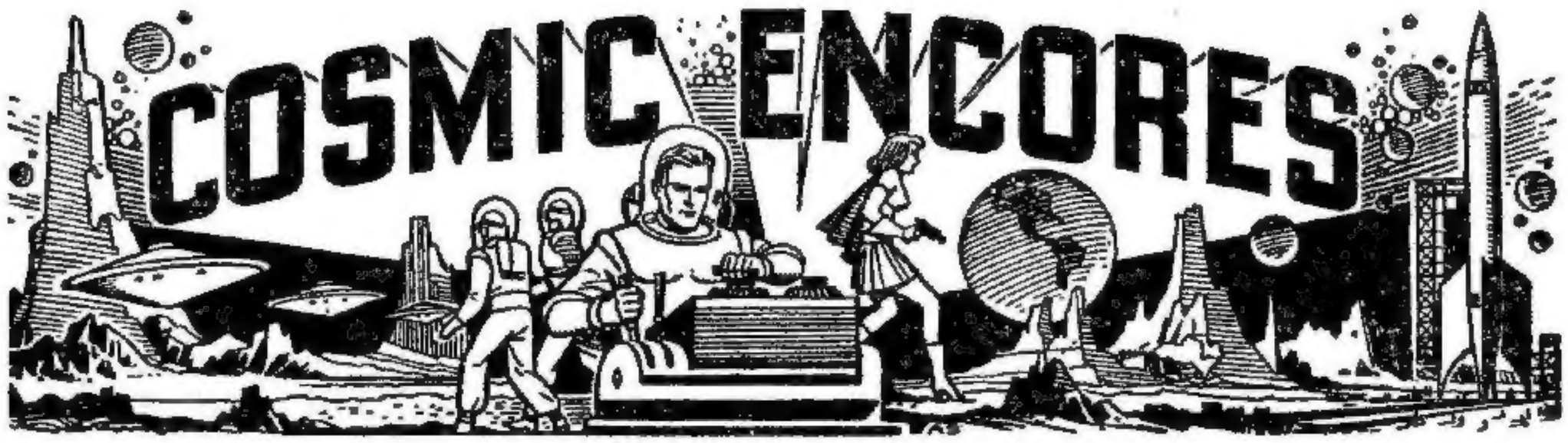

A DEPARTMENT WHERE SCIENCE FICTION READERS AND THE EDITOR MEET

IT is with both high interest and pleasure that we can, at this not so late date, report an occasional rift in the murk of the Jabberwocky Curtain, whose existence we announced in the editorial of the winter, 1951, issue of this magazine. That Jabberwocky Curtain, in case you missed the work in question, is the wall of discomfort and derision in connection with science fiction that has existed and continues to exist in too many potential readers.

To be more explicit, great numbers of folk seem to hold that stf is either a playground for Einsteins only or mere escapist trash of the most wild and woolly variety —and therefore beneath contempt. The idea is to get increasing amounts of such fearful or intellectually snobbish folk to double their pedicured toe-nails in the exciting pool of science fiction.

Good News!

We have on our desk a newspaper story, emanating from Fort Monmouth, New Jersey, biggest base of the U.S. Army Signal Corps, where the chief post librarian reports that "mystery fiction and Western thrillers have been supplanted in favor by the science fiction story. In fact this type of reading has become so popular at the installation, where some years ago Signal Corps scientists made contact with the Moon by radar, that a separate science book section has been set up. . . ."

This is news of the finest. Granted that the Signal Corps members should be among the first of service units to turn to stf, thanks to the specialized nature of their branch—but increasingly other elements of our armed forces are dealing with theories and instruments closely allied to stf. Jet and rocket pilots and mechanics, for instance, guided missilemen, submarinists, armored corpsmen to name a few.

But if the G.I. of 1951 is turning to stf it seems likely that large elements of our non-uniformed population will follow his new tastes. They always have in the past.

Judging by the current expansion of the field in magazine form, to say nothing of the sudden and vastly increased output of fantasy book publishers, the G.I.'s are already not alone. In the book review section of the March, 1951, issue of our companion magazine, STARTLING STORIES, we had no less than ten (count 'em, 10!) new volumes of science fiction to judge, rather than the usual two to four.

It is directly in line with this growing rift in the Jabberwocky Curtain that FSQ is published—is with this issue, in fact, entering upon its second year of existence. The bulk of our stories—including all of the lead novels and novelets—is culled from the same lode of science fantasy that the book publishers are currently mining, the best of stf written and published in previous decades.

Future, Present and Past

We offer, of course, a tremendous bargain in the light of either cloth-bound or pocket-sized publication. Our price, a wee fraction of that of the former, may be matched by the latter but we include a whale of a lot more material for the reader in the form of short stories and novelets along with our novel.

All right, some of you say, what's the use of looking backward—especially in science fiction, whose face seems more generally turned toward the future? Why put a lot of old wine into new bottles and serve it up to the public?

The fundamental answer to that, of

(Continued on Page 141)

KNOWLEDGE
THAT HAS
ENDURED WITH THE
PYRAMIDS

A SECRET METHOD FOR THE MASTERY OF LIFE

WHENCE came the knowledge that built the Pyramids and the mighty Temples of the Pharaohs? Civilization began in the Nile Valley centuries ago. Where did its first builders acquire their astounding wisdom that started man on his upward climb? Beginning with naught they overcame nature's forces and gave the world its first sciences and arts. Did their knowledge come from a race now submerged beneath the sea, or were they touched with Infinite inspiration? From what concealed source came the wisdom that produced such characters as Amenhotep IV, Leonardo da Vinci, Isaac Newton, and a host of others?

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WE'D BETTER GO ALONG AND SEE THAT HE DOESN'T JUMP OUT

DEER WON'T BE MOVIN' MUCH TILL LATE AFTERNOON. WHY NOT KNOCK OFF AND HAVE A BITE WITH US?
I'M SOLD. SUPPOSE WE COULD CLEAN UP A BIT, TOO?

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IF YOU'RE SURE WE WON'T BE CROWDING YOU
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VANDALS of the VOID

Where the crested invaders came from no man could say—but they threatened to bring destruction to the three civilized planets!

A Novel by J. M. WALSH

CHAPTER I

Off to Mars

THE message that was to change the whole course of my life came through on the General Communicator about 10 P.M., Earth Time, while we were still within the planet's atmospheric envelope.

The interstellar liner *Cosmos*, bound from New York (Earth) to Tlanan (Mars) had lifted from the Madison Landing scarcely an hour

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before and we were still making altitude when the call came through from Harran.

This was to have been my first interplanetary trip as a private passenger, my first carefree holiday in years. Not that the journey itself held any attraction for me or that I was new to the outer reaches of space. On the contrary.

As an official of the Interplanetary Guard, which is responsible for the smooth running of traffic and the maintenance of law and order in the void between the inner planets, I had seen rather too much of them. Nevertheless I was looking forward to a holiday free from emergency calls, the long restful voyage to the Red Planet and the hope, if time allowed, of a stopover on Venus on the way home.

Captain Hume—a man of Earth parentage, though he had first seen the light on Mars—and I were old friends and I expected a heartier welcome than usual, since on this particular trip I had no official status. As a rule the captains of the interplanetary liners look askance at us.

We mean trouble for them, the endless scrutinizing of passengers and documents and often as not the complete suspension, where the need justifies it, of the skipper's own functions.

I boarded the *Cosmos* early in the evening while the liner was still tilting in the slips. Captain Hume was then in his cabin. His own particular duties would not begin until after the take-off and in the meanwhile the running was in the hands of the first and second officers.

The first, a man named Gond with whom I had some slight acquaintance, came up to me as I crossed the gangway and told me the skipper would be glad to see me as soon as I could make time, presumably after I got settled in my cabin.

That did not take long. To one used to the stark simplicity of the Guard-ship accommodation, the passenger cabins spelled luxury. But I did not linger as my training had taught me how to dispose of my few belongings in the minimum of time with the minimum of effort. Then I made my way in what I judged to be the direction of Hume's cabin.

The *Cosmos* was a new type of craft to me. She was the first to be commissioned of the new giant liners that were meant ultimately to ply to the outer planets, though until the entire fleet was ready she was being tried out on the home run between Earth, Mars and Venus.

She embodied features with which I was not familiar, and in many ways her designers had departed from the standardized plan laid down by the Board of Control in the year 2001, when the first regular space service was begun following on that disastrous business of the War of the Planets.

I had some difficulty in finding my way and once I was stopped by an officer I did not know with the intimation that this part of the ship was not free to passengers. I flashed my badge at him however, that silver model of a Guard-ship with the letters I. P. G. stamped across it, asked to be directed to the captain's quarters. Rather surlily he conducted me through a maze of cross-passages to a stairway and told me that I would find what I sought at the head.

I came out on the observation deck and here I was more at home, for in this part of the ship the original design had not been departed from. I pressed the button on the door that would show my face in the vision-plate on the captain's table and waited. Almost immediately the door swung open and Hume's hearty voice cried, "Come in!"

IT was like coming into another world after the bare bleak passage outside —a warm cozy room lit by suffused daylight from the store-tanks, a room picked out in restful white that somehow lulled the senses and soothed the eyes.

Sanders Runs into Romance — and a Space War!

In most respects it was like any other skipper's cabin, with the televox, the ground screens of the television, the dial charts and the thousand and one compact gadgets necessary to an interplanetary captain's hand at any hour of the day or night. One new feature however caught my eye, the book-machines racked up on the shelves.

"So you've come along at last, Sanders, and for once other than as a trouble-maker," Hume boomed at me. "Make yourself comfortable. I've nothing to do for thirty clicks or so."

JACK SANDERS

He nodded at the clock above his table. I had been subconsciously aware of the humming buzz of the seconds passing but almost on the heels of his words came the *click-click-click* of three minutes past the hour. This, too, was a new feature. We in the Guard-ships have another type of clock, one that measures in half-seconds, for when we travel it is at a tremendous speed and our chronometers need to be accurate to the last least degree.

In answer to a question of Hume's I told him something of my plans. My knowledge of the surface of the planets was rudimentary. I had been a dozen times in Tlanan and once to Shangun, the capital of Venus, but these had all been flying trips—literally—and I knew nothing of either land in the way I had come to know my own world.

Hume chuckled. "Mars you'll like," he said. "Next to Tellus"—he meant Earth—"it's the sweetest little planet I know and I've seen some and mean to see more. But Venus—" He gave a mock shudder. "It's certainly beautiful, though I can't abide the perpetual cloud-drift. I like empty skies with the hot sun pouring down."

"I don't," I said. "Perhaps too much work in the absolute zero of space has tempered my regard for the sun."

"You chill being! But all you Guards are the same. Have something as a warmer for a change."

He did not wait for my nod but pressed a button in the wall behind him. A panel slid away and a tray shot out with two glasses on it filled with—pure water!

He chuckled again at my look, then took a small metal box from a drawer of his table. The box held a hundred or more tiny brown pellets, of which he selected two, dropped one in each glass and watched the water discolor as the pair dissolved. When a stream of hissing bubbles rose to the surface he handed me my glass.

"Martian Oxcta," he explained, though it was a thing I had never heard of. "It has all the virtues of Earth whiskey without its drawbacks. Drink up."

I tasted it, just the merest sip. Liking it, I swallowed the rest at a gulp. There was exhilaration in the draught and something more. In all my interplanetary experience I had never tasted the like and I said so.

"You wouldn't. Earthmen don't as a rule. Mars still keeps some of its own secrets. But I happened to have been born there. As you know my wife's a Tlananian, and that counts too."

He slipped the box back in the drawer

and I heard a click as the automatic lock engaged. The care he took of it made me wonder about some of those other secrets at which he had hinted and what, if anything, would happen to anyone who betrayed them.

It came to me suddenly, sitting there, that the situation had its illegal side.

"Hume," I said. "I'm a friend of yours, you're a friend of mine. Put it that way. This stuff of yours we've just drunk?"

"Yes?" He cocked one eye at me.

"Only this. I'm a Guard. They pick us for integrity, moral, physical and every other way. Should I, knowing what you have, say nothing? There's an Earth-law banning alcohol even on spaceships in the void."

He laughed heartily. "There's not a taste or trace of alcohol in it. Giving it to you transgresses no law in the Universe. Can you take my word for that?"

I nodded. "I know you, Hume."

"Good." And there the matter dropped.

QUITE a little thing, it seemed—then. Looking back I'm not so sure. That odd Martian Oxcta, it appears to me, had something to do with the events that were to come.

We never felt the lift, the *Cosmos* rose so lightly from the slips. Insulated from all sound as we were in the cabin, we heard none of the blare of departure either. Only, the warning glow of the red bulb above the dial chart on the opposite wall told us that New York, the whole American continent indeed, was sliding away beneath us.

In the old days there was none of this gentleness in the take-off. We had not as yet learnt to control gravity with our screens. We could only nullify it, a practice that sometimes had dire results.

We sat and talked and time went on. Soon the call would come for Hume to take over and sling the ship out of the Earth's envelope of air, always a ticklish business. Already he had his eyes on the ship's communicators, awaiting reports from the various control departments.

A shutter dropped in the wall, and a call came through from the communications room. Hume touched a button. The face of the operator glowed in the screen and his voice came.

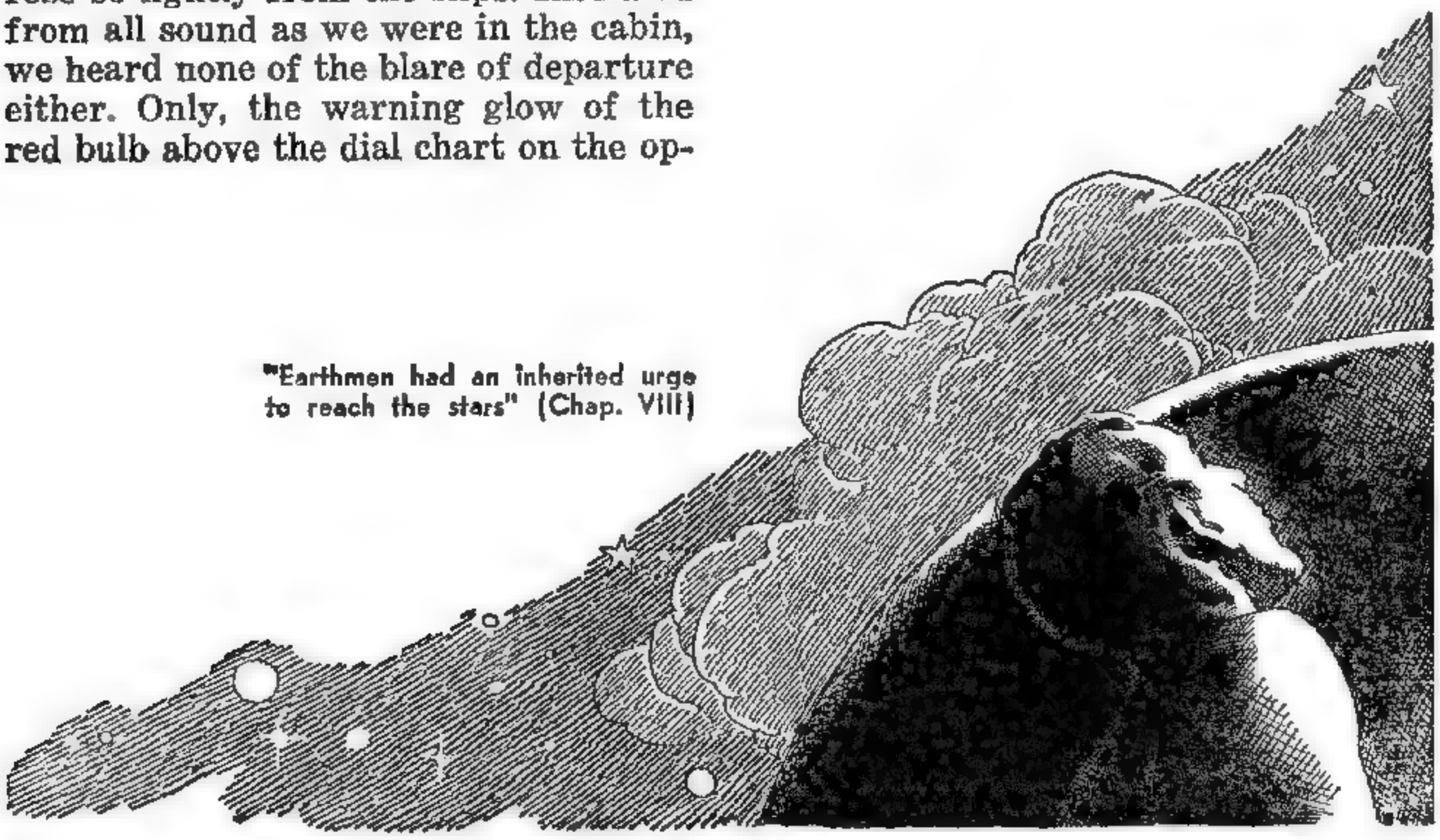
"Call through for Mr. Sanders," he said. "Televox."

I rose to my feet and Hume caught my eye.

"I'd better leave you to it," he mumbled.

"No need," I said. I knew it didn't matter. He couldn't hear what was said if I didn't wish.

I stood before the screen, my fingers



"Earthmen had an inherited urge to reach the stars" (Chap. VIII)

and I heard a click as the automatic lock engaged. The care he took of it made me wonder about some of those other secrets at which he had hinted and what, if anything, would happen to anyone who betrayed them.

It came to me suddenly, sitting there, that the situation had its illegal side. "Hume," I said. "I'm a friend of yours, you're a friend of mine. Put it that way. This stuff of yours we've just drunk?"

"Yes?" He cocked one eye at me.

"Only this. I'm a Guard. They pick us for integrity, moral, physical and every other way. Should I, knowing what you have, say nothing? There's an Earth-law banning alcohol even on spaceships in the void."

He laughed heartily. "There's not a taste or trace of alcohol in it. Giving it to you transgresses no law in the Universe. Can you take my word for that?"

I nodded. "I know you, Hume."

"Good." And there the matter dropped.

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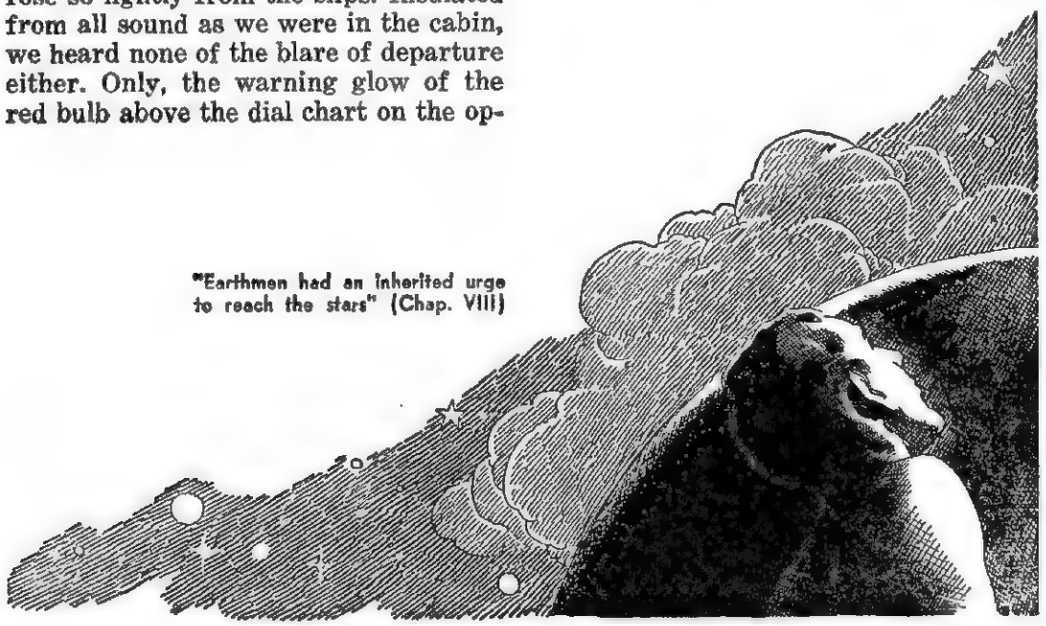
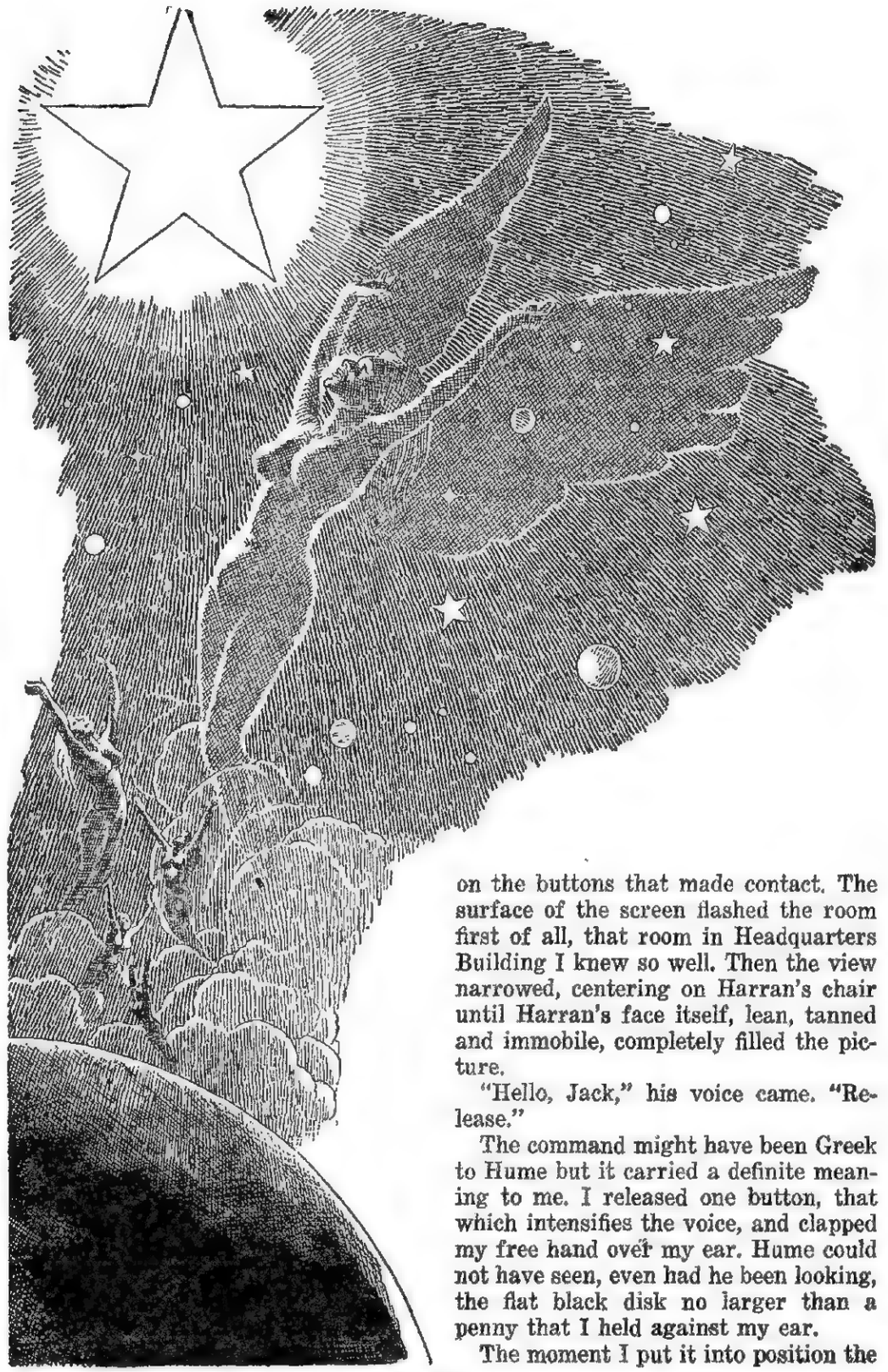


"Earthmen had an inherited urge to reach the stars" (Chap. VIII)



on the buttons that made contact. The surface of the screen flashed the room first of all, that room in Headquarters Building I knew so well. Then the view narrowed, centering on Harran's chair until Harran's face itself, lean, tanned and immobile, completely filled the picture.

"Hello, Jack," his voice came. "Release."

The command might have been Greek to Hume but it carried a definite meaning to me. I released one button, that which intensifies the voice, and clapped my free hand over my ear. Hume could not have seen, even had he been looking, the flat black disk no larger than a penny that I held against my ear.

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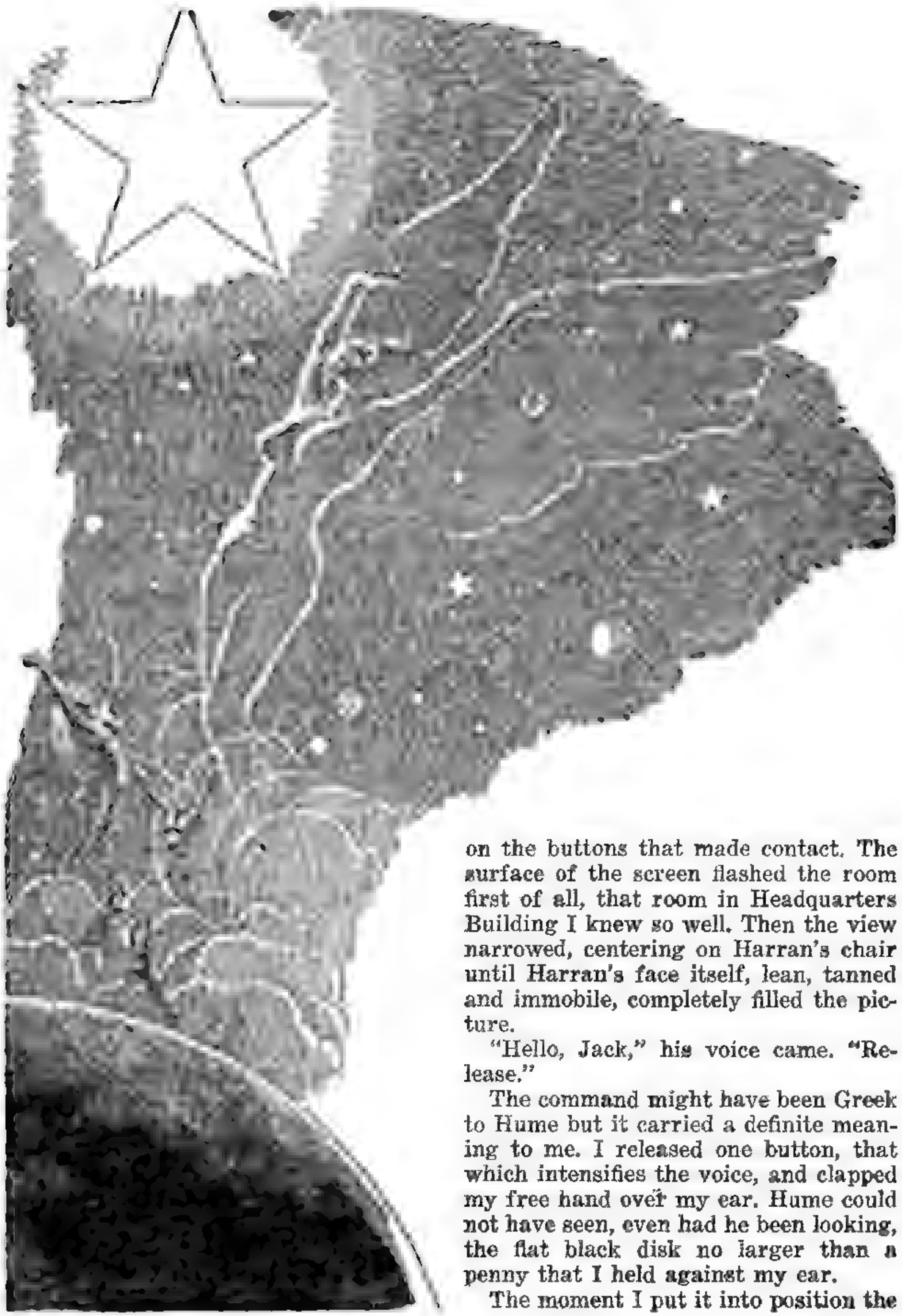

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disk functioned. Harran's voice, which before had filled the room, faded away entirely. The screen itself grew dark. But I could still hear him talking, a tiny voice in my ear, clear and marvellously distinct, though a man standing at my elbow could not hear a sound.

What Harran had to say was startling enough. Two spaceships had come in that night with all communications paralyzed. In each case the trouble had occurred in open space and was preceded by a feeling of intense cold, though the heating apparatus in each ship was working perfectly. Some passengers, indeed, had succumbed to the cold. Whether they could be revived had not yet been ascertained.

"Where do I come in?" I asked.

Harran told me. It might be some as yet undiscovered property of space that had caused the trouble. It might—he thought it quite likely—be the work of some alien forces. But whatever it was I was to keep an eye lifted.

"Hold on," he cut in on his own orders. "There's something else."

"Quickly," I warned him. "We're near the edge of the atmosphere now."

Once we were away from the Earth's atmosphere, of course, the televox would not function.

Why is beyond me.

"Reports through from entry ports of Venus and Mars," Harran took up again, "state number of craft overdue and failing to answer calls. The Guards are being notified at their stations but to be on the safe side we're tuning in on all, who like yourself, are space-traveling. Use your own discretion but solve your end of the mystery if you can."

"Is that all?" I asked.

The screen flashed up again and I saw him nod. "That's all," he answered. "Good . . ."

He meant 'Good-bye', but the last word came to me only as the thin ghost of a whisper. We had passed beyond the atmosphere and were now out in free space.

I slipped the disk back into my pocket, and looked around.

The cabin was empty.

CHAPTER II

Sanders Acts

FEELING free of the cabin I sat down to think the matter out. Some space-ships overdue—two others reporting excessive cold though the heaters were working all right—that was all. Yet it was enough to galvanize Harran to activity, enough in his opinion to justify him calling me on duty.

What did it mean? What was that odd hint of alien forces? One felt disposed to say nonsense.

Nothing is nonsense nowadays. Less than a century ago mankind sighed because there was nothing left to explore. Today we have reached beyond the world. We have discovered other worlds or had them discover us—not quite the same as I may some day relate. At least we know that we have much to learn.

We have set foot on four of the nine planets, the other five are in the process of being explored and we are not without hopes that soon the Galaxy may be penetrated by our space liners. Not much when one comes to think of it.

Idle speculation, of course, which took me nowhere. Hume, I must see and talk to. It was clearly a matter of which he should be informed.

I got up in search of him but the moment I sealed the door behind me I turned the other way and went instead down to my own cabin.

Everything was as I had left it. My baggage was still packed. My steward would have opened it and stowed my things away in the ordinary course had I not warned him to leave it alone. There were things in it I had no wish for anyone to see.

I opened one grip, delved down to the bottom and sighed with relief as I felt my hand touch the cold metal of the box I had hidden there. It was sealed and locked but I broke the one and undid the other and drew out the ray tube

from its nest of cottonwool.

It was a queer little weapon, six inches long and no thicker than a lead pencil, but it could do deadly work up to fifty yards. I slipped the full magazine of twelve charges, no bigger than match heads, into the hollow butt and slid the catch over. A spare tube and the two thousand extra charges that were still in the box made me hesitate.

There was a little ledge over my bed. One of the supporting girders of the deck above rested on the partition separating my cabin from its neighbor, formed an angle and a dark shelf where the light did not penetrate. I slipped my little box in there, pushed it far back so that no abrupt motion of the ship would dislodge it.

Then I went in search of Captain Hume. On the way up to the control-room I slipped my silver badge out of my pocket and fastened it in my coat. A warning would not hurt him. He would guess the moment he saw it and not be altogether taken by surprise.

A light metal ladder—had it been detached I could have carried it easily in one hand—led from the promenade deck to the control deck above. The upper end of it was closed by a bar snapped into place, charged, as I knew too well from experience, with a current that would give a nasty shock to any unauthorized person who attempted to force a passage.

One of the crew stood guard beside it, a ray tube in hand. It was all more or less show for not once in a hundred trips does the need arise to use it. But routine is routine. The man flung the tube forward dramatically as my head appeared above the level of the deck flooring.

"I want to see Captain Hume," I said. "It's important. The name is Sanders."

As I spoke I kept my hand clutched over the left lapel of my coat. It looked like a purely nervous gesture such as any man might make but it was not. I did it of design, to hide the blaze of the badge pinned to my coat. I had no mind to broadcast my service before the appropriate moment.

THE fellow stared doubtfully at me.

"Stay there," he said harshly. I could see him plainer now, as he could see me. A touch of the Martian in him, I thought, though I could not be sure.

The scrutiny no doubt satisfied him of my lack of evil intent for he touched a button on the rail beside him and the bar lifted, giving me passage. The pressure of the button, too, must have set a signal for Hume, for even as I reached the deck level a door opened and a face looked out.

It was Hume himself. He looked by no means pleased to see me. Perhaps from what had gone before he already guessed at the possibilities of disturbance behind me.

"You wanted to see me?" he said. "What is the trouble now, Jack?"

I slanted an eye toward the control room. "You're not alone?" I said.

"Something for my private ear?" he said with a frown. "Well, you can say it just as well out here. There are four pairs of ears in there, you know."

I dropped my hand from my lapel, and the flash of the badge caught his eye. His face went nearly purple at the sight.

"By the Planets!" he exploded. "This is intolerable! No man's command is his own these days."

"Steady," I hushed him. "It's not as bad as that. I've no wish to supersede you. What I want is cooperation. I'll tell you why."

He cooled down at that and I gave him the gist of my communicator message. "I don't like it," he said at the end. "There may be nothing in it—on the other hand there may be a lot. What am I to do?"

"What I'd like you to do, if you don't mind," I said mildly, "is this. Call me the moment you sight or find your instruments recording anything out of the ordinary. I'd like a chat with any other space-ship we pass. And, of course, if we meet a Guards Patrol . . ."

"May the Guards fuse!" he snapped. "No, I didn't mean that, Jack. But no skipper likes to think that at any click of the clock he may cease to be master

in his own ship. You know that."

"I know. I'd prefer not to take command. I've never done it yet where I could find a skipper willing to work in conjunction with me."

I held out my hand. For a moment he hesitated, then gripped it.

"There will be no trouble between us, that I'll warrant you," he assured. "I'll see you're kept posted and whoever is on watch will have instructions to call you at any hour of the twenty-four if anything appears."

He stopped. His eyes lingered on my badge. I slipped the badge into my pocket. "There's no need," I said, "to advertise trouble before it comes."

He looked relieved. "I'm having you put at my table," he remarked. "I'll see you there the first meal I'm free. By the way, do you want to scan—"

"The ship's papers?" I said and hesitated.

He met me halfway. "Perhaps it would be better if you did. I'll have the purser warned. He's a discreet soul. You'd better confide in him."

He walked back with me to the bar at the head of the stairs and spoke to the man on guard. "Mr. Sanders is to be admitted whenever he wishes," he said and the man saluted. I fancied he looked at me more curiously than ever and I wondered if he suspected my official status.

Parey, the purser, was still in the throes of documentation when I appeared but he took my intrusion in good part. "I've seen you before," he said. "What's it now? Something broken loose?"

"I hope not," I returned. "I'm coming to you in confidence though." I told him much of what I had told Hume.

I THOUGHT he was a little shaken by the revelation but he tried to make light of it.

"You fellows are always alarmists," he said, "particularly the shore-end." It was odd how the old sea-jargon still lingered in speech.

"The shore-end, as you call it," I reminded him, "is staffed with men who have all graduated in space."

"That's the trouble," he grinned. "They don't realize that conditions have changed since they came back to the atmosphere. However, here's the passenger list, shore-compiled, so any errors aren't mine. You'll mark that."

I took it—the crew list too. Nothing startling in either—an average ship's company, an average passenger list. Earthmen preponderantly, the minority of Martians and Venusians about equally balanced. One name caught my eye as I ran down the list.

"Nomo Kell?" I said puzzled. "Queer name, that. It isn't of Earth origin."

Parey smiled. "Nor Mars nor Venus either, I'll be bound. Like to see his prints?"

He meant the duplicate identification papers and photographs that are always handed in for checking at the office when an interplanetary passage is booked. Strictly speaking Parey had no right to offer me the documents. They are supposed to be confidential and even had I demanded sight of them he should have surrendered them only under protest. But I think he realized that in my case the more I knew the less harm was likely to come to anyone.

The details were not illuminating. They ran to the effect that Nomo Kell was a Martian citizen, qualification the statutory one of twenty years residence. The spaces that should have contained his birthplace, parentage and so on were bracketed by the one word *Unknown*.

"Queer," I commented.

"Queerer still," said Parey as he handed me the photo. "Look at this and see why."

I held the thing up to the light and looked it over. The colors came out exceptionally well and threw the man's features into vivid relief. The scale at the side of the picture showed that he stood between seven and eight feet in height, a giant of his kind.

His eyes were an odd kind of purple. Even in that color print they seemed extraordinarily alive. His skin, face, ears and hands, was an odd red that gave the suggestion of having been boiled.

But the queerest thing of all about him was the shape of his head. I had never seen anything like it before. It was crested. A ridge of something that looked like horn started a little above his forehead and ran back, as I found from the note, to his occiput.

"Where in the Universe does such a one come from?" I asked. "Is he a freak?"

Parey frowned. "Anything but that," he said. "He came across on our last drift. In talk with some other passengers certain questions about Mercury came up. He flatly contradicted the others' views, told them quite definitely they were wrong, let it appear that in some way he knew what he was talking about. See the suggestion?"

"That he is a Mercurian. But that's nonsense."

PAREY looked at me owlishly. "Because we haven't made that planet yet, eh? Too close to the Sun our scientists say, too risky. Perhaps so. Nonetheless it would be easier for Mercurians, granted there are any such, to come to us than it would be for us to go to them."

"We don't even know it is inhabited," I pointed out.

"We don't even know that it isn't," he countered.

He was right there. I drew up a report that night before I went to bed, condensed it as much as possible and took it to the signals room for transmission to Harran. The operator looked it over in a puzzled fashion.

"What the blazes is this?" he asked. "Don't you know all messages must be written in a recognizable tongue?"

"That doesn't apply where I'm concerned," I said. "Send it as it stands."

"Why?" he said, a trifle defiantly.

I showed him why. He stared at my badge with a droop to his lip. It was marvellous the effect that little silver shape could have on the recalcitrant.

I could see, however, that he was still curious as to the language in which the message was written. I did not tell him it was a tongue that had ceased to be a living language on Earth nearly fifteen hundred years ago. He was too young to know that it was only three-quarters of a century since it had ceased to be taught in the schools as a so-called classical language.

I waited until the fading of the helio glow showed the message had gone through and the flash-back brought an acknowledgment of its receipt. Then I went off with the intention of turning in.

I had been but a few hours on the *Cosmos* but in that short space of time my plans had been materially altered. What else might happen before we entered the Martian atmosphere was purely a matter of conjecture. I preferred not to speculate.

CHAPTER III

The Lunar Call

I AWOKE to the sound of buzzing in my ears. It came to me that I had overslept, that this was the warning note of the breakfast call. How many, I wondered, would face the tables this morning.

Not many, I fancied. Even in these enlightened days a goodly proportion of folk still suffer from a kind of space-sickness akin, no doubt, to the *mal-de-mer* that once used to attack travellers on Earth's oceans.

However the tables were fairly crowded when I reached the saloon. Either our doctor was not a popular man—there was a fair sprinkling of ladies present—or else he knew his work so well that he preferred prevention to cure.

Hume, heavy-eyed and with his face lined was halfway through his meal when I appeared. He caught my glance as I entered and beckoned me to a vacant space beside him. I noted as I took my seat that my name had already been affixed to the chair-back.

A Martian woman was my opposite, quite the loveliest creature I had ever

seen. She could not have been more than twenty-five and the full glow of health made her fine eyes sparkle and her dark cheeks glow with a greater vitality than we Earth people are used to seeing on our own planet. Strange how, despite their height, these Martian girls seem so wonderful. Her name, I learnt as introductions went around, was Jansca Dirka.

The man who sat a plate away was a Dirka too but it did not transpire whether he was her father or her brother and there was nothing outwardly to show which he was. The way that they wear their age is, to an Earthman, another puzzling feature of the Martians. I have heard it said that they retain their bloom right to the very last, then fade and die almost in a night.

Knowing Hume's leaning towards his wife's folk I was not surprised to find I was the only Tellurian at the table. I had expected more Martians if anything. Instead the remaining four were Venusians, those quaint, not unlovable people, who somehow remind one almost equally of a bird and a butterfly.

Father, mother and two daughters they were, the latter three very interested in everything strange and new, yet with an interest that one felt was purely evanescent. That, I am told, is the impression one always receives on first making contact with Venusians. How far from true of the race as a whole it is may be judged from the fact that it was the Venusians who first discovered for us the practically inexhaustible deposits of rolgar on our moon.

Rolgar, as everyone knows nowadays, is the substance—one can hardly call it a mineral—without which space-flying could not have attained its present ease and safety. The Venusian himself was an official of the Rolgar Company, he told me, and was bound for the Archimedes Landing on the Moon with a party of Earth miners. His wife and daughter were stopping over with him.

"No place for women," I hazarded.

"Not such a wilderness as used to be imagined," he answered me. "Little troubles to be faced due to variations of pressure and extremes of temperature but on the whole quite a change for a short period."

His wife and daughters seemed anxious to sample the new experience as all women, no matter what their planet, welcome a novel sensation. Mir Ongar himself—such was his name—had paid more than one visit to our satellite, so counted himself something of an authority on it.

HUME rose from his seat in the midst of our talk, gave me a careless nod, then as he came round the back of my chair dropped a whispered word in my ear. "Control room as soon as you're ready," he said.

I could have lingered there at the table merely for the sake of stealing glances at Jansca Dirka but something in Hume's look more than his speech made me imagine an urgency behind his parting words. Also, oddly now I come to think of it, I had a wish to see what Nomo Kell looked like in the flesh.

As I came out onto the promenade deck I glanced through the quartzite windows. We were veering in now towards the Moon and its disk was beginning to fill the void ahead of us. The Earth behind was dwindling, though its size was still considerable I judged we had not yet reached the midpoint of gravity, for an odd quiver of the hull showed the propulsive power of the rolgar engines was still on. In a little they would be cut off and we could use the moon's attraction to draw us onward until it became necessary to counteract the pull and decelerate.

"A light-message for you," said Hume as I entered. He took an envelope from the drawer and handed it to me. "I thought it better not to mention the matter at table. One never knows."

Cautious, extra cautious man. Well, better that than a loose-lipped babbler.

I spread the flimsy out in front of me and translated as I read. Though it came over Harran's signature it was merely an acknowledgement of my overnight report, with the added note that if in the event of a Guard's ship being handy

when anything untoward occurred I need not interrupt my holiday but could hand over investigation to the patrol.

"Formal acknowledgment of my last night's report merely," I said off-handedly to Hume."

"I thought as much," was his comment. "Though if more of these messages keep coming and going our operators will be getting headaches. It's a code none of them has handled before."

"If they'd lived a century ago," I said a mite incautiously, "it would have been child's play for them to read it."

He flashed a glance at me. "A dead language," he remarked and said no more about it.

"By the way," I asked, not that it mattered much, but it gave him something new to think about, "these Dirkas —who are they?"

"They're friends of my wife and myself. Dirka himself—her father—is a director of the Martian Canal Company. The girl is nothing. Being a Martian woman she need not work for a living."

That, from an Earth-man, was a subtle jibe at conditions on his own planet or rather the planet of his race. I passed it by, however. There was nothing to be gained by retorting that on Earth many women preferred to work.

He eyed me curiously. "Sanders, how old are you?"

"Thirty-three," I said. "Why?"

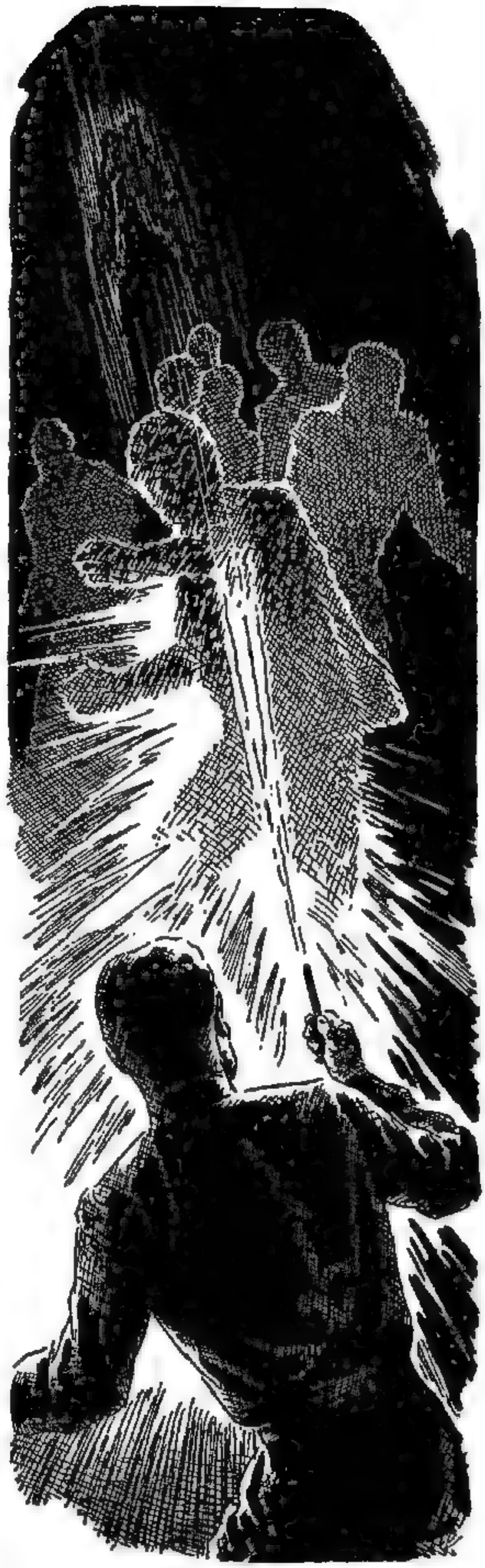
"And unmarried as yet," he went on. "Well, there's time and, friend of mine, by the comet's tail, the best I wish you is no worse luck than I had myself."

I grinned. Thoughts of love had never come to me. Even now they seemed as remote in thought as Alpha Centauri was in fact.

He ran on. "I suppose you have the whole ship's company more or less neatly taped by now."

"No need of that," I returned. "There's only one person aboard this ship that I'm interested in and that only as a matter of curiosity."

"Who?" he said with a lift of the eyebrows. "I had no idea we were harbouring any interesting personages—from your point of view—this trip."



In my agitation I loosed my full charge at the mist-like figures (Chap. XII)

"Nomo Kell," I said.

He drew his eyebrows together at that, as though the name seemed familiar, yet he could not quite place it. Briefly I described the fellow to him.

"Queer," he remarked. "It strikes something in my memory, something I wish I could recall clearly," he explained. "I can't, though. Some legend of my wife's people."

"Perhaps the other Martians on board?" I hazarded.

He shook his head. "They would not know," he said quite definitely but did not explain why.

AS I passed back along the promenade deck I met Nomo Kell himself for the first time in the flesh. It was well that I had been warned of his appearance. Had I come upon him without foreknowledge of what I would see I don't quite know how it would have affected me. Yet he was not fearsome. It was the utter unexpectedness of him that astounded.

Nomo Kell's print had flattered him. Leave out the flaring purple of his magnetic eyes, the crested abnormality of his head—size of his body apart—and there was little to differentiate him from the ordinary planetarian.

But seen now, walking within a few paces of me, I sensed something else. A force, perhaps—a radiation. I could not tell.

He gave me a fleeting incurious glance and passed by. I might have stood there staring after him but for a voice in my ear and the touch of a hand on my arm.

"You find him interesting, Mr. Sanders?"

It was Jansca Dirka at my elbow. I reddened. I had been caught in an act of rudeness, no light matter when one is likely to trench on touchy interplanetary conventions.

"And a little more, Miss Dirka," I said, using the Earth style of address. I have never quite accustomed myself to the long string of phrases, flowery and complimentary, which these Martians employ.

"I thought you would," she said gravely. "You have noticed his steps?"

I had not. I hardly gave them a glance until she drew my attention to them. Now I saw that he walked with a peculiar mincing gait, a sort of gingerliness, as though each movement was carefully timed and measured.

"He seems," I said slowly as it dawned on me, "to be deliberately shortening his steps, walking with extra care as we would on the Moon's surface."

"Exactly. The *Cosmos* is adjusted to Earth gravity. We travelled Martians and Venusians have become so accustomed to its variations from our own planets that our reaction is automatic. But he . . ." She flung out her hands with a curiously expressive gesture.

I caught the flash of the idea in her mind. "It looks almost," I said, still a trifle doubtfully, "as though he were used to a larger planet than we."

"It looks like that," she mimicked. "I might even suggest it would be well not to let such an idea—or its opposite—lie dormant in the back of your mind."

With that and a tingling glance she turned and was gone, leaving me wondering. What did she see or know that I could or did not? What indeed made her suggest anything of the sort to me? No hint of my office, I could swear, had escaped Hume. I could only think that somehow, uncannily, she may have guessed.

Our engines shuddered, a shiver ran through our whole framework, then died away. We had passed the midpoint of gravity, and with our motors shut off were utilizing the Moon's pull to draw us rapidly towards her.

CHAPTER IV

The Wreck in the Void

I HAVE spoken of the Moon as airless, yet that is not strictly correct. Our satellite, as we have known for centuries, lacks an atmosphere such as

we possess, and its day and night swing from torrid heat in the one to the extremes of perishing cold in the other. But in the rifts and hollows and the abysmal depths of the craters air still lingers, tenuous and all but unbreathable to us, but air nevertheless.

To counteract the extremes of heat and cold, and secure a constant supply of air at earth pressure, huge buildings had been erected. Each mine is practically an enclosed city, entered through airlocks. It was on one of these airlocks that the *Cosmos* had come to rest. One of her ports was jointed to a port in the airlock, forming a sort of enclosed gangway, through which passengers ascended and descended.

Apart from the mechanical ingenuity that aided the embarkation there was nothing of interest to see. Give me a landing in free air every time.

From where I stood I was able at the same time to run a speculative eye over the passengers leaving and arriving. Those getting off were mostly Earth miners, rough rugged fellows, with an odd Earth official with them—and of course my acquaintances, the Venusian family of Mir Ongar.

There were not so many coming on board. Mostly Venusians—a couple of those ubiquitous planet-trotting Martians with them to add a leaven to the dish. We took on no Earthmen. When one comes to think of it, it is a curious thing that the Moon should hold least attraction for those who are closest to it.

As it is the Moon—or rather its rolgar mines—gives us the means of holding the balance of peace in the Universe. The sinews of interplanetary war are to a great extent ours and none can fight should we decide to cut off supplies.

Our stay on the Moon was of short duration. An airport inspector or two donned oxygen helmets and made a thorough examination of our landing gear and gravity screen apparatus. As soon as that was done and our clearance had been issued, our port was sealed and disconnected from that of the airlock. The signal was given and the lift began.

Our course was set exactly for that point in the void where, according to our astronomical charts, our orbit and that of Mars would intersect. A ticklish job, you must understand, is this of space navigation, requiring a remarkable intricacy of calculation and cross-calculation.

So the days passed. Once we sighted a meteor heading, it seemed, directly for us—but our repeller ray sent it rocketing off on a new path.

* * * * *

A finger touching me lightly on the shoulder brought me out of the depths of sleep. Gond, the first officer, was standing beside me.

"Mr. Sanders," he said in a half-whisper, "the skipper wants you."

"What is it?"

"Something I sighted out in space. It was my control hour. I called him, he sent me to call you."

"Coming." I slid out of my bunk. "You can go back. I'll follow."

I was half-dressed before the door shut on him. It wanted two seconds to the minute I had allowed myself when I slipped through the door, fastening buttons as I went.

Hume himself awaited me, dressed only in tunic and shorts. The control room was warm enough to make up for any deficiencies of costume.

"What is it?" I asked the moment I stood beside him.

He did not reply, but motioned to the screen that communicated with our look-out 'eye.' The screen darkened momentarily, then flashed into light as the beam from our searchlight shot out and picked up the object that had occasioned the alarm.

For some seconds I was not quite sure what it was. Then, as we swung round and I could see it broadside on, it looked like a space-flier. I would have felt satisfied it was that but for the absence of lights on board. It was a long cigar-shaped object, tapering to a point at one end, made blunt and warty at the other by the discharge tubes that clustered there.

"Can you get her name?" Hume whis-

pered to me.

I could not. But I made sundry adjustments to the scale knobs at the side of the screen and the projection of the space flier seemed suddenly to leap forward and become closer.

With some little difficulty I managed at last to pick out her name. *M-E 75 A/B*, I read from the line painted near her prow.

"Mars-Earth," Hume amplified. "Carrying A and B class traffic, passengers and freight. This is your job, Sanders, I think. I wonder what's gone dead in her?"

"How did you pick her up?"

"Our locater positioned her long before we were able to see her. We—Gond, that is—thought it was another meteorite." He paused and looked at me. "Sanders," he said abruptly. "I am in your hands. What am I to do?"

"I'd like a look at her, a closer one, if I may. Can we lay alongside?"

"We can board her if you wish."

"I wish you'd give the orders."

He threw me a smile at that. This big bluff man had his weakness and I played on it that night, partly from a sense of courtesy, partly because it was policy. I left it to him to give instructions, set myself to watch the craft. We had veered a little, our speed was slackening, yet we would have to move round in a wide circle before we could come back and sheer inside beside the stranger craft. Our engines, which had for a time been silent, took up an odd pulsation, just enough to steady us.

MOMENTARILY I lost sight of the derelict, picked her up again and again from all sorts of odd angles as the movable eye mounted on our prow swung round as we altered our course. Then abruptly I saw the length of the derelict looming large beside us, a black bulk that almost filled the vision screen. There came a slight jar.

Word came up from the port control that we were connecting and that our airtight extension had been sealed against the derelict's nearest port.

As I turned away from the vision screen Hume caught my arm. "Can I come?" he whispered in my ear.

"Certainly. I'd like a witness, someone to check my own observations. What are her tests?"

He spoke into a tube, then turned to me. "Normal interior air pressure," he reported. "Temperature twenty-eight degrees Fahrenheit."

I whistled. Four degrees below freezing. Something queer there. Either she should have dropped to absolute zero or else maintained the normal interior temperature.

I took down one of the emergency coats from a hook, a heavy furlined fabric that covered me from chin to ankle, slipped my feet into the insulated boots one of our helpers held towards me and drew them thigh-high. With the coat drawn in and its bifurcations buttoned tightly round each leg I was insulated against cold. I drew on my gloves and someone clamped on my air-helmet, sealing it temperature tight on to the metal collar at the neck of my coat.

Each helmet contained a radio attachment that provided means of communication. I tried mine. It buzzed and a fraction of a second later I heard Hume's voice burring in the receiver at my ear. Sealed against air and temperature variations, we could converse as we chose.

"Ready, Sanders?" he said, and when I answered in the affirmative he led the way down the direct ladder to the connecting port.

The moment we stepped through into the stranger vessel we sensed the change. Despite our heated emergency kits the cold air lapped round us, clutching our limbs with icy fingers. I had a feeling that the cold was not so much the absence of heat as a sentient thing in itself.

Hume touched the button of the portable light at his belt and I followed suit. The white beams sprang out, filling the place with a light akin to natural daylight.

There was nothing to see here, but then neither of us expected that there would be. The direct ladder that led

straight to the upper control department seemed clear and with my place as an Interplanetary Guard to sustain I took the lead. The trapdoor was closed but it opened at a touch and I climbed into the compartment, then turned to give a hand to my colleague. A moment later we stood together, staring round the cabin.

It was as modern as its equivalent on the *Cosmos*. From some of the devices it seemed the craft was at least ten years old. I made for the log book. Search brought it to light in a drawer of the captain's table and a comparison of dates showed that it had been written up to within twenty-four hours.

Both of us had naturally expected to find some trace of humanity in the control room, bodies if not living creatures. But there was no sign of anyone, no sign of a struggle. For all we could see the men on duty might have walked out the door in as orderly a fashion as though they were going ashore.

"What do you think of it?" asked Hume. "It's uncanny. It's . . ." Whatever else he was going to say he pulled himself up with a jerk. "We can't form any definite opinion until we've searched the ship."

"Quite so," I agreed but as he made a move toward the door I stayed him.

"Let's read the dials before we go," I suggested.

We studied the indicators. The engine dials showed an ample supply of fuel and the stud had been pushed over to *Stop*. The engines had not run down or been brought up automatically. Human agency had been at work here.

Mindful of what Harran had told me I turned to the heating machinery indicator. It showed that the apparatus was still running. Yet here we were in an atmosphere at present a few degrees below freezing point, whereas the thermometer should actually have registered something between sixty and seventy degrees Fahrenheit.

Curious on this point I turned to the wall thermometer. The glass was shattered, the mercury had vanished. From the way in which the glass had broken it was impossible to say whether the damage was deliberate or due to excessive cold. If it was the latter the control cabin itself must at one period have endured a temperature of at least forty-four degrees below zero!

Hume clutched my arm convulsively.

"What is it?" I asked, starting.

"I thought—I felt," he spoke in a strained voice, "as though someone—or something—had just come in."

I swung round sharply. The door, which a moment or so before had been closed, was now open a space. Even as I stared the gap seemed to widen perceptibly.

CHAPTER V

The Sleepers

AS a man I am no braver than the average. I know there are more things in the Universe than we have as yet managed to tabulate, forms of life, abodes of intelligence, that may appear monstrous to us, just as per-

[*Turn page*]

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haps we appear monstrous to them. As against this I believe—and experience has yet to prove me wrong—that everything there is must face dissolution sooner or later, that it can indeed be killed suddenly and violently, provided only that one can reach a vital spot.

My courage was oozing from the tips of my insulated boots as I turned towards the door and already I was aware of an uncomfortable prickly sensation about the region of my backbone. Nevertheless the fact of another's presence gave me comfort. So, taking my ray in my free hand, I swung the door wide open with the other and sent the beam of my lamp searching down the dark passage outside.

I saw nothing. No visible entity appeared.

My audiophones, which would have recorded the sound of any movement, however faint, remained stubbornly silent.

Only a wave of cold that threatened to bite through the warmth of my emergency coat seemed to flow in on us like a living thing.

"Nothing there," I said in a tone meant to be reassuring.

"Nothing," Hume repeated, and I could have sworn to a faint note of relief in his voice. "I'll tell you what, Jack," he ran on, "it's the uncanniness of the place that's giving us the creeps."

He tried to push past me, no doubt in the hope that in action he would find a spur to his own courage, but I stayed him. These space captains may rate themselves as highly as they please, but when it comes to facing the dangers of the unknown it is the Guard's privilege to lead.

I shut the door carefully behind us. I was more or less sure now that some unnoticed motion of the vessel had sent it stealing open, but I had no mind in case I was mistaken of being taken unawares again.

As we traversed the passage to the promenade deck my mind played round what was to me the most significant feature we had so far come across, the utter emptiness of the control room. I could not imagine any officer of the Interplanetary Service leaving his post unless there was good reason for it.

Our beams wavered down the line of the deck, fell on the chairs spread about the space and simultaneously we stopped dead, looked fearfully at each other.

"Did you see it?" Hume whispered.

"See what?" I asked.

"The people sitting in their chairs—still—lifeless."

So Hume had seen it too.

"Hume," I said abruptly, "we haven't thought of it before. We've taken certain things for granted. But there should be buttons about the wall here—lights. Perhaps after all they may be working."

He swung the beam of his own lamp round, then his mittened hand closed over a stud and drew it down. Instantly the length of the promenade deck sprang into light. I shuddered. Row on row of chairs, most with occupants, met our eyes. They sat as stiff and still as figures carved from wood—dead without a doubt.

I leaned over and touched the nearest figure, a woman, on the cheek. And even through the heated thickness of my gloves her flesh struck cold.

"Hume," I said, "this is a doctor's job."

"That's what I'm thinking," he agreed. "I'd better call him up?"

I nodded.

HE adjusted his communicators to the ship's. "That you, Gond?" I heard him say. "Good. It's Hume speaking. Send Dr. Spence over at once. What's he to bring? I'm sure I can't say. Oh, yes"—I'd whispered to him—"say it may be suspended animation, or cold exposure. That's data enough for him. And better send two men with him. The most reliable—and give them a ray tube each."

"Tell Gond," I whispered, "to close his shutters on the promenade deck. Else we may be watched."

He put that through and I heard the click as he cut out.

"We'd better wait," I said in answer

to Hume's unspoken question. Nevertheless I put in some of the time of waiting by looking about me. It seemed that everyone had been frozen into immobility as he or she sat. The thing itself had come upon them suddenly for there was nothing either of surprise or horror in any face.

The doctor came with his attendants, stared at the still figures, made such tests as he could, then straightened up and faced us.

"Frankly," he said in answer to my question, "I can't tell you what it is. They've been frozen, that's what it amounts to, but several of the characteristic signs are absent."

I guessed what he meant. I'd looked closely enough for the blue and purple splotches, the other signs of a man frozen to death, and had failed to find them. A little bead of perspiration trickled from my forehead down my nose.

The glass front of my helmet seemed to be clouding a little.

"Hume—Spence!" I called through the audiophone, "it's getting warmer!"

Something akin to a blank consternation showed for the moment in Hume's face. The doctor looked interested, albeit a trifle puzzled.

"Don't you see?" I ran on. "The heaters are beginning to make themselves felt. All the time they've been warming the air up, not perceptibly until now. But it's a big lift from forty-four degrees below zero up to the twenty-eight it was when we came on board. That means that from the time this happened —whatever it was—until the moment we stepped aboard the heaters have raised the temperature a matter of seventy-two degrees, a tremendous lift. It must be getting back to normal now."

"But why," said Hume, puzzled, "didn't the heaters freeze out too when this happened?"

The answer to that hit me almost the minute he asked the question. "Simple," I explained. "The heater plant runs in a vacuum. External cold couldn't affect it."

"Of course." His voice was tingling. I put up my hands clumsily and caught at the fastenings of my helmet.

"Steady, man, what are you doing?" Hume said agitatedly.

"I'm beginning to roast. Perhaps we can take our kits off now. At least I'll be the first to try."

"But the air." Hume's voice was vibrant with warning. "We got a normal pressure, but there may be something in it, something inimical to life."

"I'll take the risk," I answered. I had seen something out of the corner of my eye, something that looked a mite uncanny.

I preferred not to say what it was—yet. But it made me think that the air was safe, breathable at any rate.

My helmet came off at last and the cool air hit my face. Cool air, not cold. The air was breathable. At least I could sense no foreign element in it, nothing to account for that abrupt drop in temperature.

IN a moment I had stripped my emergency coat, leaving only my boots. They did not matter much. The doctor was free of his trappings by this time too. He took one gulp of the air and looked across at me. Then I saw his eyes widen.

His glance had travelled past me to the chair at my back. I whirled round. The woman whom I had first examined was stirring, visibly stirring. Her bosom rose and fell, gently at first, then more rapidly as she gulped the air in. Her eyes opened—wide. She stared about her. Her glance fell on us.

An inarticulate cry, a sort of strangled scream, issued from her lips and her head dropped forward in a faint. Spence sprang to her aid.

But the little cry, almost soundless though it was, might have been some signal already agreed upon. All over the deck figures were stirring.

Hume with his helmet off and himself halfway out of his coat uttered an exclamation. I gasped as I followed the direction he indicated. A tall man with the insignia of an Interplanetary skipper on his collar had risen languidly

from a chair some distance down the deck with a bewildered expression on his face.

His expression changed as he saw us. Surprise, anger at this seeming alien invasion of his vessel, seized on him. He made a quick movement forward, then came striding down the deck towards us.

"What's the meaning of this?" he demanded. Then a puzzled look came into his eyes and he passed one hand across his forehead.

"How did I get here?" he said bewilderedly. "The last I remember I was in the control room, thinking it was getting rather on the cold side, wondering if anything had gone wrong with the heaters."

I took his arm. "Captain," I said, "there's a mystery here. With your help we'll solve it. We came on you, floating in free space without lights, your people stretched out apparently dead—as you were just now."

"Who—what are you? From what ship?" he asked quickly, the light of an odd fear in his eyes.

I found my badge and extended it flat in my palm towards him. "You're in good hands," I said. "Whatever you have to say you can say without fear."

For the moment he hesitated, staring away from us through the quartzite windows of his ship at the black shadow of the shuttered bulk of the *Cosmos* floating a few yards away.

"My officers, the men who were with me . . ." he said a trifle incoherently, running his eyes down the long lines of chairs.

The passengers were stirring now, coming back to life, all a little bewildered if one could judge from their expressions. The woman who had fainted had now revived and it struck me that she was the only one of the lot who had shown any sign of fear on regaining consciousness. Could it be that she alone of all that company had seen something?

"Good," I said, "your first duty is to your officers. I think you'll find them all on this deck."

I was beginning to have a glimmer of what had happened, though the precise motive behind it all eluded me. "Get them together, bring them where we can talk." I dropped my voice an octave, came a little closer to him. "Captain," I said, "don't look round. But tell me quick, who is that woman just behind us?"

He turned slowly as though looking down the run of the deck. I could have sworn his eyes did not so much as touch the woman in passing but, "A Mrs. Galon," he whispered back. "An Earthwoman, she says, though I take leave to doubt it. Why?"

"We'll want her," I told him, "after we've talked with you. But see she doesn't move away. I'd rather she had no opportunity to speak with the others in the interval."

"As you wish," he said deferentially. "Better get your men to tend her. Mine —I don't know—everything's bound to be disorganized."

I gave the cue to Hume and he passed the word to his two men. While the skipper was rousing the watch on duty the others of us unobtrusively slid between her and the rest of the passengers.

I don't think she noticed it, or if she did she gave no sign. A moment it seemed and the space ship's captain came striding back to us, behind him a little straggle of his men.

"I am ready now, gentlemen," he said, "if you will follow me."

CHAPTER VI

A Strange Story

AS we passed off the promenade deck onto the ladder leading to the control-quarters I flung a glance back. Mrs. Galon was sauntering along behind us, one of our men on either side of her. She was too far away for me to see how she was taking the situation, though something in the very way she moved convinced me that she was not in the least upset.

The captain of the *M-E 75* pushed open the door we had so recently shut, switched on the light and stood aside for us to enter. We went in followed by the duty man, the second in command and the captain himself.

When the door was shut— "My name is James Bensen, and I am captain of this ship," he said. "We are homeward bound from Enghan, Mars, to London, Earth. Crew, sixteen all told. Passengers, forty-three adults, two children. Cargo, marsonite in bulk. Here"—he flung open a drawer of his table, and drew out a steel-box—"here are my papers."

"Thanks," I said, as I took them. He had made merely the formal declaration of identity and carrying traffic that is required of every space boat that is stopped and challenged by the Interplanetary Guard. Before I went further I ran through his papers, found they agreed with his declaration:

"And now," I went on, "before you start your story it may help if I tell you what I found."

I gave him in detail a sketch of all that had transpired from the moment our locators had picked up his ship drifting free until the time he regained consciousness on his own promenade deck. I was careful, however, not to hint that other ships had apparently suffered in the same way.

His brow knitted as my story proceeded. It was plain he was more perturbed and bewildered than ever.

"I don't know that I can tell you anything much at all," he said half apologetically. "Things were going as usual. I was in control. My second and duty man were with me when I fancied it was getting a bit on the cold side. The indicator showed, however, that the heating machinery was running as usual."

I interrupted. "Can you give me any idea of the time of this?"

He did a brief calculation in his nead. The pause made me realize that he was still running on Enghan (Martian) time.

"It would be the equivalent of about eight P.M. Earth Western time," he said. "The passengers would have just finished dinner, I fancy. I was on the point of ordering the duty men to call up the heater control and ask what was wrong when I suddenly dropped into unconsciousness. When I came to I was propped up in a chair on the promenade deck."

"Thank you," I said formally.

He looked at me a trifle anxiously. "It doesn't help matters much, does it?"

"It's hard to say—as yet," I told him. "Now the others."

The second and the duty man had much the same story to tell.

"On the face of it," said Bensen at the end, "it looks as though we were carried from here down the deck while we were unconscious. Though," he added thoughtfully, "I can't see how anyone could have existed through the sort of cold that we felt."

"*You* did," I pointed out. "All of you."

"I'm afraid I didn't put that too well," he said. "I should have said 'retained consciousness' rather than 'existed.' A cold chilling enough to send us into a torpor for some hours should have had the same effect on anything—anybody else, I mean."

"Not necessarily," I said. "Suppose the people—we'll assume that's what they were—who moved you came on board in emergency suits like ours, insulated against cold."

A light sprang up in Bensen's eyes. "You're assuming, of course, that the cold was an artificially induced state but it seems to me that there's one point you've overlooked. Assuming you're correct, the cause of the cold must have been introduced from outside, perhaps in the form of a gas. The biggest argument against that however, is the fact that we are to all intents and purposes hermetically sealed between ports besides being insulated against the cold of space."

"We're dealing with facts," I said a trifle testily, "not with theories. The fact is that something happened here to lower the temperature to such a degree that everyone lost consciousness. The heaters are functioning perfectly nor-

mally, so whatever occurred was not due to any breakdown on their part.

"And if you want any further evidence that it was the work of an intelligent agency you have it in the fact that you and the others on duty recovered consciousness in another part of the ship."

THE captain looked crestfallen.

"That's true," he admitted wryly.

"That being so," I went on, "the point to clear up at the start is whether the trouble originated on board or arrived from outer space."

"You mean to say," Bensen cut in with a light in his eyes, "that there's a possibility that someone on board, some passenger perhaps, was at the back of this? That would appear too patently impossible."

"In what way?" I demanded.

"Cold like heat has to be manufactured," he explained. "You need apparatus and chemicals and so on."

I saw what he was driving at. Even in the fourth decade of the twentieth century science was beginning to realize that cold was not the absence of heat but a state quite as distinct and as readily induced, even though it happened to be at the other end of the temperature scale.

"And what you're working up to, I've no doubt," I said, "is that no such apparatus or chemicals could possibly be smuggled on board. The examination of passengers' baggage on embarking is pretty strict at the Earth ports but how about the other planets?"

"Mars," Hume put in in his deep voice, "is even stricter if possible. No, my friend, you can rest assured that nothing of the sort could have got past the examiners at Enghan."

"Very good," I said. "That's impossible. Remains the other alternative then—that some space visitors half-froze you into a state of unconsciousness then boarded the vessel with some object yet to transpire."

"One moment." It was Hume who interrupted. "Tell me why everyone was half-frozen—if you're correct in saying that—instead of being wholly frozen, stiff and stark."

"The answer seems simple enough," I retorted. "The heaters were running all the time, and once the nadir of temperature was reached they gradually managed to overcome the condition. No one was left in the frozen state long enough for harm to ensue."

"But even that's only the beginning," Bensen said glumly. "Admitting we've reasoned rightly up to this juncture, admitting further that by some means yet to be discovered space raiders made an entrance to the ship, we've still to settle who or what they were and what exactly they came for."

"What of value have you on board?"

"Nothing," he told me, "other than our Marsonite cargo and that as you can see from the indicators still shows intact. Looks as if the whole thing was absolutely without motive."

I wondered what, if anything, had been removed from the other space-ships Harran had told me about.

"If I'm not mistaken," I said, quickly, "we have a witness of sorts—Mrs. Galon. I think she knows or saw something. Will you have somebody bring her in?"

She came, glancing questioningly from one to the other of our little group. Even the presence of the doctor did not seem to reassure her. I imagine that during the wait she must have been turning matters over in her mind, perhaps finding a lengthening fear beginning to throw its shadow across her path.

Yet she was a woman of character and decision. Before any of us could speak she lifted her head, quite regally, and swept us with a glance one could almost call defiant.

"Well, gentlemen," she said, "why have I been brought here and kept under guard awaiting your pleasure?" She turned to the one man of our little group she knew. "Perhaps you, Captain Bensen, can explain it?"

"The doing is not mine, Mrs. Galon," he said. "I'm under orders too. We are in the hands of the Guard."

IN such a moment one can imagine all sorts of things, most of them without any foundation in fact at all. I thought, however, though probably I was mistaken, that a glance of understanding passed between them.

"At least in the hands of one representative of it," I said, and bowed.

She looked at me with a genuine interest she had not hitherto displayed. Her irritation at her detention appeared now to have vanished entirely.

"Then—" she said. "Then, I wasn't dreaming. It wasn't a nightmare if the Guard is playing a part in it."

"You saw something," I said sharply. "In those few minutes on the deck in your chair before you fell asleep something happened. What was it?"

"If I said just what I saw or rather what I fancy I saw—no one would believe me," she said a little fearfully.

"No one will doubt you," I told her. "Listen to me, Mrs. Galon. I can tell you something that may help you. I can trust you to keep it to yourself, not breathe a word of it to the other passengers?"

"Of course," she said. "I won't say a word to a soul."

Frankly I did not believe her. Not that it mattered much. But thinking she was being taken into my confidence she was almost certain to tell me without reservation everything she knew.

"This, then," I said slowly, "is not the only ship that has had a similar adventure. This, however, is the first ship I've boarded and it is my business to get to the bottom of this particular mystery. If you can give me the slightest help the Service and I will forever be your debtor."

Flowery, you will say, and so I thought and hated myself while saying it—but something told me she was the type to whom such phrases were meat and drink. Out of the corner of one eye I saw Hume frowning.

"Oh," she said. "We-ell, I don't know that there is much to tell really. I was sitting in my chair on the deck just where you found me. Of a sudden I began to feel cold. I wondered if anything had happened to the heaters. Then I thought perhaps I'd better go to my cabin for a wrap.

"But I could not move a limb, not even a finger, only my eyes. Why they weren't paralyzed too I can't say. Then there was that feeling of intolerable cold and another feeling on top of it just as if I were sinking away into unconsciousness under an anesthetic. Not actually an unpleasant feeling at that.

"I think I must have been on the verge of going, for things seemed very misty before my eyes. Then the odd thing happened that I'm still not sure wasn't something I dreamt. Two figures carrying someone came down the length of the deck. The person being carried, a limp unconscious body, must have been Captain Bensen or one of the officers. I could see only the uniform.

"But it was the people, things, whatever you care to call them that were carrying the body that—that made me think I was dreaming. Figures perhaps eight or nine feet high, higher than any Martian. They weren't real, not tangible. They seemed just like mist.

"But the most horrifying thing about them was that I could see clean through them. As they passed I could see the side of the deck and the quartzite windows and even a star or two in the black void beyond, just as if they were transparent, made of glass themselves. It was horrible!

"Well, after that I don't quite know what happened. Either I fainted right off or the lights went out: I don't know which. All I can say is that everything seemed to go dark. The next I remember is seeing you good folk round me."

CHAPTER VII

The Guard Ship

SHE finished and looked expectantly from one to the other as though she fancied we would treat her tale with derision. Yet there was nothing in it to

laugh at.

"Can you describe the figures more closely?" I asked, but she shook her head.

"I'm afraid I can't. I saw only the vaguest outlines and they seemed to flicker."

"As though a faint light were playing on them?" I suggested.

"Yes, that's just what it looked like," she said quickly. "How do you know?"

"I don't," I said smiling. "I merely guessed right, it seems."

Truth to tell all the while she had been speaking one idea after another had been tumbling through my mind. Something about light and its refractive qualities, something about things being made invisible through the light beams being bent. I had a book in my luggage on the *Cosmos*—one of the old print books—that dealt with problems of the kind.

"I'd better take her disks and prints," I said when she had gone.

The radio operator, who had been with us all the time and whose business it was to attend to such matters, turned to the little wall machine. A compact piece of mechanism that recorded every word that had been uttered and every gesture made in the room since the moment Mrs. Galon entered. It was so cleverly hidden that I doubt if any outsider would have suspected its existence.

The operator pushed a button placed in an inconspicuous part of the machine and a little panel slid back, revealing the cavity from which he took a roll of still dripping film, and three or four disks. The spoken word was recorded at the side of the film, of course, but since it was not always possible to run the film through when one wanted to consult it, the sound was also recorded on the disks rather after the style of old gramophone records.

"Be careful of that film," the operator said as he handed it over. "It's not quite dry yet. Perhaps I'd better dry it out for you."

"Go ahead," I answered. I could spare five minutes.

I saw Hume shift from one foot to the other, then glance nervously at his watch. It was evident he was getting impatient and wondering how much longer he was going to be held up. I tried to hurry things as much as possible.

"Captain Bensen," I said, "you've been boarded in mid-space and subjected to a deal of inconvenience and annoyance. On the other hand your cargo as shown by your indicators is intact and nothing has been touched here in this cabin. Is that a fair summing up?"

"More or less," Bensen agreed. "Except that you'd better record that there's nothing to show who our visitors were or even that we had any at all."

"Only Mrs. Galon's statement," I cut in.

"Barely visible entities!" he said.

"I imagine," I said mildly, "that it would be hard to explain what has happened in any other way."

"I think," said Bensen with almost my own intonation, "that you will find it hard to explain matters in that way."

WHAT more he might have said I can only guess, for at that moment came the low whine of the locator, a shutter on the wall of the cabin dropped and a red bulb glowed to life.

The operator sprang to the television screen, connected the communicator, and with the receivers to his ears took the call. "Interplanetary Guard-ship *E. Twenty-two* calling," he said. "Wants to know what the trouble is."

The *E. 22!*—my own Guard-ship! For the moment no one moved in the little control room.

"What shall I reply, sir?" the operator asked abruptly.

It was significant that he looked not at me but at his own captain.

Bensen flashed me a look. "It's for Mr. Sanders to say," he said dryly.

"If I may," I said, "I'd like to answer that call."

"Go ahead," said Bensen gruffly. To the operator he added, "Mr. Sanders will tell you what to reply."

"Do you mind," I said silkily, "if I send the message myself?"

HE did not answer but stepped aside with what I thought an ill grace. There is a certain close communion between these service operators that leads them to resent the intrusion of an outsider, more particularly when the latter has the power to ride rough-shod over them.

The change-over did not occupy more than a quarter of a minute, nevertheless it was long enough for the man on the *E.22* to show impatience. Even as I fixed the earphones over my head the crackle-crackle of his signalled questions sounded in my ears.

"Don't be impatient," I signalled back as fast as I could work the button with my finger. Then without giving the *E.22*'s people time to think up something snappy in return I changed over to the Guard-ship code. The vision screen beside me was now showing up their control room, just as ours must have been becoming visible to them.

A man was standing near the operator watching the screen that reflected the interior of our control room. It was Glenn Vance, my relief. Recognition came to him almost at the moment it came to me.

I gave Vance an outline of the situation, told him why I was here and waited for the suggestion I hoped he would make. It came without hesitation.

"Pity to interrupt your holiday," the reply clicked in my ear. "I'll take over if you wish."

I signalled delighted agreement.

"Coming over at once," he signalled back. "Will clamp on to your vacant ports opposite side to the *Cosmos*."

The screen went blank and the crackle died in my ears. I turned to Bensen.

"The *E. Twenty-two* is coming over," I told him. "She'll probably escort you to the atmosphere's edge, if you wish."

Bensen nodded. "Anything that will get us safely and quickly to our destination sounds good to me now. But you?"

"I'm going back to the *Cosmos* as soon as I've handed over," I said. "I'm no more anxious for delay than you are. Also I have Captain Hume's feelings to consider. I've upset his schedule enough as it is."

"Oh, don't worry about me," said Hume. "We're all in the hands of the Guard nowadays."

I scented an undertone of smouldering sarcasm that might yet burst into flame. I was saved from saying something that might have led to an exchange of remarks for which we would all be sorry later by the glow of the warning bulbs advising us the *E.22* was connecting and would want the port opened on signal. It came a second later, a dull buzzing that filled the room.

Bensen gave the order to open the starboard port. Came first the clump of feet up the ladder, then the smiling face of Glenn Vance appeared.

"So it's really you, Jack, in trouble as usual," was his greeting as he gained level flooring and came towards me.

"The only trouble I'm in is that of delay," I said a little sharply. I was not in the mood for banter. "The sooner you can take over and let us be off the better we'll be pleased."

"So?" he said agreeably. "Well, tell me what it's all about and you can hand over at once."

He had already had my résumé over the power beam and it only needed filling in. He seemed to find the matter vastly interesting and did not appear altogether surprised. As I learnt presently Harran had sent him a flash, an all-ships call, setting out the situation in outline.

Thereafter we speeded things up as much as possible, and in a little less than ten minutes from the time Vance had arrived Hume and I and our people were making our way back to the *Cosmos*. As I turned to go I put my hand in my pocket and drew out the compact little packet of film and disks.

"You'd better take these," I said to my colleague. "Mrs. Galon's statement."

"Good. They'll do as a check. Well, good-bye and a good journey. I wouldn't change with you anyway. I'm in the thick of it here, trying to unravel this mystery, while you—"

"While I," I said, "am out of it, leading a calm and placid existence."

"Vegetating for the duration," he laughed. "Well, you'll hear all about it when you get back to duty—and will probably want to kick yourself for being out of the climax of the most interesting investigation in years."

"Probably," I agreed.

We got back to the *Cosmos*, closed our port, and signalled our imminent departure to the others.

CHAPTER VIII

A Martian Girl Seeking Knowledge

I SLEPT until the steward at the door filled my cabin with the grotesque wail of the sounder. I came to with a start, dimly realizing what had happened.

After our adventure in mid-space and our return to the *Cosmos* I had tumbled into bed dog-tired. I had locked my door against intrusion, but had forgotten everything beyond that. Since I had slept beyond the normal, and not answered the breakfast call and there was no indication in my message grid beside the door of the time I wished to be called my steward had not unnaturally concluded that something was wrong.

I sprang out of bed the moment the wailing started and made shift to open my door. My steward's face showed relief when I appeared.

"I'm sorry, Mr. Sanders," he said, awkwardly apologetic, "but when you didn't appear for breakfast and there was no message in your grid I thought . . ."

"Quite right," I told him. "My fault entirely. I'll be more careful next time. What's the hour now?"

"Ten A.M. Earth Western time," he told me. "We change to Martian time at midnight tonight. We're working up to velocity now."

That was news to me, good news in a way, for it showed our trip would be over sooner than I thought. I might have guessed it for the vessel quivered slightly to the steady pulse of the rolgar engines. Not often are they used in free space, save to take off or slow down. Evidently Hume had decided we had wasted enough time over the unscheduled stop last night.

The steward lingered. "If you want something to eat now I think I can manage it," he said hesitantly.

Looking out for an extra tip no doubt, the rascal. Well, it didn't matter much. He'd looked after me well to date and I could do with something to eat and drink.

I made ready while he was away. A certain giddiness that I did not like attacked me from time to time as I moved about. It was nothing much when all was said and done. Nevertheless it worried me. In some ways it was akin to space vertigo, an affliction I dreaded, for it would mean the end of my career in the Service. In all my eleven years in the Interplanetary Guard-ships I had not been troubled by it and so concluded I was immune.

The trouble passed away, however, by the time my tray arrived. Probably it was no more than momentary weakness engendered by the exertion and the tenseness of the night. The fact that it left me completely, once I had made my meal, seemed to satisfy me on that point.

A knock came on the door just as I was putting the finishing touches to my toilet before venturing out. I called, "Come in."

It was another steward, a man whose face I had not seen before. He had a message from Hume. The skipper was inquiring after me. If I was up he would like a word with me.

"I'll see him," I said. "Where is he? In the control room?"

In bed, the steward told me. That was rather a surprise. It set me wondering, wondering if there were any connection between my recent giddiness and Hume's indisposition.

Hume was sitting propped up in his bed when I entered. He looked a little grey. He did not speak until I had closed the door and we were alone.

"Glad to see you about, Jack," he said

then. "I was beginning to wonder."

"Wonder what?" I asked. "What's wrong with you, anyway?"

HE made a wry face. "I thought it was space vertigo when it came on," he said. "I was up before the breakfast call, not much sleep naturally, seeing what we were at during the night. But when I tried to move about, the cabin started spinning round me."

"That's bad. And then?"

"I won't bore you with my symptoms. I got a scare, however, began to imagine space vertigo was seizing me, saw my career snapping off short and all that helped to make me worse, I suppose. However, the long and short of it is that Dr. Spence came down, tested my reflexes, and decided it wasn't space vertigo after all."

"I had a somewhat similiar experience this morning myself," I gave him details. "What do you make of that?"

"What Dr. Spence thinks is that we got out of our emergency suits too soon last night. There must have been something in the air of *M.E. Seventy-five*, something other than the cold, an ingredient with a slightly anesthetizing property. We're feeling the after-kick of it now."

"What's Spence ordered you to do?" I went on.

"Stay in till I'm better," Hume smiled. "I'm feeling that way already and—if you don't mind—we'll have the complete cure in a moment or two.

"Oxcta," he went on. "You'll find the box in that drawer. The lock's a simple switch one. The white button breaks the circuit, the red one opens it."

I did as he told me, drew out the little steel box I had seen my first evening on board and handed it to him.

"Now the water," Hume said.

When I handed him the glass, "I'm glad you were able to come," he said. "I wouldn't risk getting out for the things myself and I've no mind to let others into my secrets.

"I needed that," he said as he swallowed the last of the draught. Then he eyed me. "I've been thinking of myself solely. You need a taste of it too. Draw yourself a glass."

I did and felt immeasurably the better for it. I said so. He did not answer, merely nodded and still eyed me, a trifle more thoughtfully now.

"Jack," he said, "I've been thinking. Last night put a fancy or two into my head. Yours isn't altogether a pleasant job though no doubt it has its romantic side. Still you may get into tighter corners than I'm ever likely to. Corners of the sort we were both in last night.

"A few of these on hand"—he held out a dozen of the Oxcta pellets to me—"might be valuable. Only I must ask you never to say that you have them in your possession, never indeed acknowledge that you know of their existence."

"In that case," I said, not taking the pellets, "perhaps you shouldn't offer them."

"A time may come when you'll be glad I did. You've seen their effect on me. You've felt it twice on yourself. Here, take them. Call it humoring me if you like."

"All right, since you're so pressing."

"Keep them in a metal box, steel for preference. You've got one you can use? No? Well, you'll find an empty one in the same drawer. It's Earth-made so there's nothing to connect *it* up with *them*."

I found the box, and transferred to it the dozen pellets he had given me. A lot of fuss to make about them. After all, if his assurances were to be believed, as I felt they were, they were no more than a remarkable tonic whose constituents were kept a close secret by the Martian manufacturers. The box slid into my pocket.

"As far as we are concerned," said Hume a trifle anxiously, "I take it last night's affair is over and done with."

We still kept to the old Earth style of dividing the day into periods of darkness and light though here there was neither. We saw only the blackness of space with the stars and the planets doubly bright, doubly brilliant with the absence of air.

"The Guard-ship's taken over," I

pointed out. "That should end it as far as this voyage goes. But there may be enquiries at Tlanan when we reach there. It depends on what the Martian authorities think."

"At any rate we won't have our schedule upset," Hume remarked.

"I shouldn't think so. In a day or so we'll pass the beat of the last of the Earth Guard-ships, and the Martian ones, I'd imagine, would be more interested in speeding us towards Tlanan for an inquiry than in hanging us up in mid-space."

"I hope so." He did not seem so sure of that. Perhaps he knew the Martians better than I.

A MOMENT'S silence, then, "Well, Jack, if you don't mind clearing out I'd like to get up," he said. "I'm feeling fit to face things again, now that I know it isn't space vertigo coming on. Also the Oxcta has made a new man of me. By the way, use the stuff sparingly. It will lose its effect if you take it too often."

"Never fear. I don't like forming habits, good, bad or indifferent," I told him. With that and a nod I left him.

There were many things to think about. Free though I was of the necessity of probing further the particular mystery of *M.E. 75* I was still interested deeply. Here was a mystery doubly intriguing. It seemed to defy solution, yet ever and again I had a queer feeling that I was very close to a revelation.

It was not unlikely that contact with my fellow beings might not only clear my befogged brain but perhaps set it working along new lines. For some reason or other there were few about at that hour. My chair had already been marked out for me though so far I had made no use of it. Now I found it without difficulty, dropped into it and began to fill my pipe. That alone of Earth's vices was left me for comfort.

I felt drowsy. I must have dozed, for the next I remember was a voice musical in my ear. I opened my eyes with a start. Jansca Dirka was standing beside me, smiling. I jerked upright in my chair and began some remark about having dropped off to sleep.

"I'm sorry," she said in a voice that held just the faintest trace of her native accent. "I wouldn't have disturbed you had I known."

I drew up a vacant chair beside me. "Sit here," I invited her. I did not quite believe her statement that she did not know I was dozing. Patently she wanted to talk with me.

She seated herself and half-turned towards me. "You do not mind?" she said.

"Go ahead," I said, amused. "I can see you want to ask questions. What is it now?"

Her eyebrows lifted archly. "Nothing of any importance. I am merely a Martian girl seeking knowledge."

"In that case I'll be happy to tell you anything I can."

"I have been reading," she went on gently, "delving into the ship's library of your Earth books. Somehow I prefer them to the book-machines. They are not noisy. One can read them and at the same time maintain privacy without the need of sound insulators."

"I'm glad you like them," I said simply. "I, too, have a leaning towards the old print. In many ways I like the old ideas. The book-machines seem to lack something. Yet we took them from you."

She frowned. "From Mars," she said thoughtfully, using the Earth title for her planet. "Well, not all that comes from us is good." She stopped abruptly, thinking perhaps of that disastrous War of the Planets that came near wrecking the civilizations of the Inner Planets.

Abruptly she pulled herself back to the conversation. "I found amongst those books an old one by an Earthman named Wells—'The War of the Worlds,'" she said slowly. "I thought at first it was an actual history, then I discovered as I read that it was what you call . . ." She hesitated, looking to me to supply the elusive word.

"A romance?" said I.

"An imaginative romance," she qualified. "I read on and on. Tell me, was Earth really like that? Did men at one

time drive animals about?"

"As a picture of those times I fancy it is pretty accurate," I said. "That is, of course, if you leave out the invasion part of it."

SHE shuddered. "To think that Earthmen once imagined we might assume those shapes—the things that came in the cylinders. Octopus shapes. Loathsome things." Then quickly before I could comment, she ran on. "Yet it was you Earth-people who first voyaged to the distant planets."

"I've often wondered about that," I said. "Time and time again it has puzzled me why neither your people nor the Venusians branched out in that way."

"There were many reasons," she told me. "You are a predatory folk, an exploring, restless race. Also you had certain things we lacked. We could fly but we had not that urge to reach out for the stars that is your heritage."

In this she was not quite accurate. Interplanetary travel would never have become the accomplished fact it is today had it not been for the discovery of rolgar. True, we found it on the Moon, in our own territory so to speak, though we did not immediately realize its significance.

Even with the improvements Leyton-Browne introduced in 1975, which enabled our space explorers to extend the radius of their travels, interplanetary voyages could not have become a commercial proposition. It was only when we made contact with the Venusians and learnt from them the true value of rolgar that we began to make any progress at all.

It is odd to recall that to the Venusians rolgar was practically a theoretical substance, one as rare, if not rarer, to them than radium is on Earth. The Earth, ignorant of its value and its almost incalculable powers, possessed on our Moon a practically unlimited supply. Sad to think that it was over rolgar that the first and we hope the last of the dreadful interplanetary wars was fought. . . .

[Turn page]

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"Do you think then"—I switched back to the immediate subject—"that there would never have been communication between us had it not been for Earthfolk?"

"Do you?" she said and for the moment I failed to realize that the question was merely rhetorical. "Do you ever pause to think, Mr. Sanders, whether somewhere in the Universe there may not be others, intelligent beings, like us in form, immeasurably our superiors in intellect, who may even now be reaching out to contact with us? One hears strange stories."

I stared at her. What she was saying ran so close to the ideas in my own mind, paralleled so nearly my own recent experiences that I asked myself if she weren't throwing out feelers. A Martian girl seeking knowledge . . .

"You *know* it!" I said. I might have phrased it otherwise, have said, "You've guessed!" But I used instinctively the one word that accurately summed up the situation. She knew.

"I know," she said, this Martian maiden seeking knowledge, and her hand dropped comfortingly on mine. "Indeed I am more aware of you than perhaps you think. You see, you have interested me—us. My father and I."

She did not take her hand away. A moment later I had prisoned it in mine. "You know," I said challengingly. "But how much do you know?"

"Enough to startle you," she told me. "That you are no private tourist, that you hold a high position in Earth's Guard-ship Fleet."

"I am not unknown. It is quite possible that many travellers on the space-liners should have seen me in an official capacity, and have remembered."

"That is so," she agreed. "But do not worry. If you wish to preserve your secret it is safe with us. But as you say that is a little thing, no sure test of the knowledge I boasted I possessed."

She leaned a little closer to me, so close that I could have taken her in my arms without effort had I wished. "Suppose"—her voice dropped to a whisper—"suppose I were to tell you what else I know, of the things that have worried you and threatened to upset your holiday, of the events of last night, of the ship adrift in space, and the sleeping, half-frozen men you found there."

"There must have been a leak somewhere," I said. "Someone has talked."

"You could explain it so," she agreed. "But what you could not explain by that or any other form of reason is this, a thing known only to you and Captain Hume that in this pocket"—she tapped it lightly—"you have a little steel box containing twelve pellets of Martian Oxcta."

CHAPTER IX

A Friend, or Perhaps a Little More

I STARED at her stupefied—while the unrecoverable seconds ticked remorselessly away. I scarcely knew what to say or with what counter to meet this frank revelation. The fact that she knew something and no doubt guessed more of the mystery in which I had played my little part did not matter so much. It was the uncanny knowledge she displayed of something rifling in itself, yet about which no one but myself and the captain should know anything, that was so disconcerting.

"Tell me," I demanded, still in the same soft whisper she herself had used. "Tell me how you know all this. It's . . ." In my turn I halted for a word and this time it was she who supplied the needed one.

"Uncanny," she suggested and when I nodded, "No, Mr. Sanders, it isn't. It's anything but that. To show you what I mean I'll tell you something more. Wait a moment, please."

She thrust her hand through the V opening at the bosom of her dress, kept her hand there under the shadow of the material almost as though she held something in her palm, something at which she looked and frowned a little, with a drawing together of those fine

eyebrows of hers.

"Face me squarely," she commanded. "Ah, that's it. Now—under the left lapel of your coat, where you can show it in a moment if necessary, is your interplanetary badge, a silver badge in the shape of a space-ship with the letters—I. P. G. spread along its length."

"Go on," I said with interest. So much she could have told me from memory if she had ever—as no doubt she had—seen a Guard's badge before.

"You're still a little doubtful," she whispered. "We-ell—on the back of the badge is a number—seven-twenty-five. Beneath the number are the two letters S. C."

She could not have known without having seen my badge—which I swear she had never done—could not possibly have known that I was number 725 of the Interplanetary Guard and that my rank was Space Captain.

She went on calmly, "In your right-hand coat pocket you have an envelope, buff in color. It contains a space radio form. The message on the form is written in an Earth-language I do not know. It is not one in use, that is all I can say. But I can spell out the words to you." She spelled it through until I thought it time to call a halt.

"Please!" I said almost breathlessly. "I'm convinced."

She looked up mischievously at me. Her hand came out of the bosom of her dress, empty, as it had gone in. Yet I could swear that the moment she raised her eyes to meet mine I heard a slight click as of a spring being released.

"And of what are you convinced?" she whispered.

"Of the reality of what you're saying—or doing," I told her. "But it's magic, witchcraft."

"No. Applied science, that's all. A little toy it is, yet how it shakes you, saps your confidence and makes you talk of magic, of witchcraft, of things no sane planetarian really believes in."

"Tell me," I said quickly, "why do you do this thing? I am sure it is not merely to puzzle me."

"It is," she said, "because I want to help you, if only in my small way."

"With that little toy? What is it? May I see it?"

She took my questions in order. "Yes, with that little toy, as you call it. It is worked on the principle of your X-rays, something analogous, at any rate. But I cannot show it to you here. There may be prying eyes about."

She flung a swift glance about the deck. No one seemed in the least interested in our talk but then that was nothing to go by. Men—women too—can watch and listen without showing the slightest outward sign of interest.

"Mr. Sanders, you are Earth-born. You have conventions that are not ours. We have conventions that possibly you do not understand. Would you therefore think it a thing that should not have been said if I were to ask you to come down to the seclusion of my cabin where we can talk undisturbed?"

MY hesitation was but for the moment. "No, of course not," I said readily.

"Leave me now," she said. "My cabin is C-eight. In ten minutes you will find me there. We had better not go together."

There was wisdom in her suggestion. With a brightly-flung word and a cheery nod for the benefit of anyone who might chance to be watching, I rose to my feet, sauntered off along the deck, stopped to relight my pipe, strolled through the saloon.

So casually I made my way to the accommodation deck, and presently located C-eight. The glow of a light tube streaming through the grille over the door told me it was in occupancy. I glanced at the name grid. *Jansca Dirka*, that was all. She then had the whole cabin to herself.

She closed the door behind me, snapped the switch and shut the sound insulators. Then she turned to me with a smile.

"Why," I said, "are you doing all this?"

"Because," she said, "I would be your friend."

"A friend or perhaps a little more," I said softly, overwhelmed by that other-world intoxication of her presence, that lure that was not Earth's. I had her hands in mine as I spoke. She said nothing but I felt them drawn softly away.

"We can," she said with meaning, "speak of such matters after. There are more important things to talk of now."

She turned swiftly away from me for a moment. What she did or where it came from I could not say, but when she faced me the next second in the palm of her outstretched hand there lay glittering a watchlike thing with a tiny thread-thin chain attached.

"Take it," she said. "It is yours. It will help you."

It was shaped like a watch, save that back and front were made of some vitreous substance, neither glass nor quartzite. As I looked into one crystal face I could see nothing till the girl leaned over, touched a spring I had not noticed. I nearly let it drop, for the floor of the cabin under the crystal face seemed to vanish and I found myself looking into the deck below, seeing everything beneath me as clearly as though the floor were made of glass.

"It is rather startling when one sees it for the first time," she said, "but as I've told you the principle underlying it is quite simple. It is merely a matter of penetrative rays."

"It *is* rather astounding," I said as soon as I recovered my composure. "You don't know then how the principle is applied?"

Slowly, seriously she shook her head. "I do not know," she said deliberately, "and if I did I would not tell. I am giving you this little instrument because I know it will help you but not even for you would I betray the secrets of my people."

I turned on her, suddenly contrite. "Of course!" I said. "You are doing a wonderful thing even in giving me this. I should not have asked you any such question."

She waved that aside, came a little closer and as though afraid that even in that soundproof cabin she might be overheard dropped her voice to the merest thread of a whisper.

"Keep it there," she said, pointing. "On the inside of your buttoned jacket. Make a pocket for it there to keep it hidden out of sight. You have only to put your hand down—you need never pull it out more than is necessary—to see the dial face on one side or the other."

"Your father?" I suggested.

"He does not know," she said quickly. "I do not want him to know. He is well-disposed towards you, as who would not be? But even he, if he knew that I was even to this extent betraying a Martian secret to one not of our race by blood or by adoption, would be harsh with me."

Her voice trailed into silence.

"Tell me," I said quickly, "if this were known—what would happen to you? Anything dire?"

She did not answer but the droop of her head told me all I wished to know. This Martian maiden, in so many ways like an Earth girl, in so many other ways unlike, was for me taking the stars knew what risks.

"Tell me," I begged. "Is it merely that I am an alien, because I have no Sonjhon blood in me that you would be punished?" In my eagerness, anxiety, call it what you will, I had stumbled into using the Martian word itself.

"Yes," she said slowly, thoughtfully, "yes, it is because you have no Sonjhon blood in you that I must fear for myself."

For a space she paused. I saw the glitter of the little knife in her hand and sprang forward but she thrust me back with one hand, and for once I was not minded to use force.

"Stay," she said fiercely. "I mean no harm to you or anyone else. But I see a way."

Something in her eyes compelled me to wait. She took the little knife, made a tiny scratch in the fleshy part of her left arm, waited until the red blood came.

Suddenly she thrust the arm towards me, and spoke commandingly. "See," she

said, "I have drawn blood. With your lips remove it."

She came of a long line of those born to rule, this girl. There was something of their concentrated magnetism in her, something too that was all her own. Scarcely knowing what I did, I obeyed her. My lips touched her warm flesh.

SHE drew her arm away and as I straightened, looked at me with a new light in her eyes.

"You are one of us," she said with a strange dignity and a stranger softness in her manner. "Now you can always say with truth that you are of the Sonjhon blood for you have that blood, my blood in you."

It was no barbaric rite, no ancient survival of blood brotherhood such as once existed amongst certain peoples on Earth. It was her way, the only way she knew, of giving me power to claim if necessary the rights by blood of a citizen of Mars.

The deed, as much as the thought behind it, amazed me. I knew enough of her planet's customs to realize that it would hold as binding in any Martian community but whether it had any deeper implication I could not say.

Our eyes met. She stepped back a pace, drew a long breath, and slid the tiny knife into a sheath at her girdle.

"I had better explain," she said in studied calm tones, "the working of the—" She used a word I did not catch, a Martian phrase new to me. She smiled at my puzzled expression. "That little instrument I gave you," she explained.

I took the thing from my pocket—for lack of a better name I called it in my own mind "The Crystal Eye" and as such it will be referred to hereafter—and handed it to her. She showed me that the spring at the top was in reality a sort of screw. It could be adjusted to suit the distance in much the same way that one adjusts binoculars.

"Tell me one thing before I go," I said, for it was a thought that worried me. "Do all Martians carry these?"

"No," she said slowly, "no. Only those of—only a favored few carry them."

I read in her eyes the meaning of that hesitation, could almost hear the word she had left unsaid. I knew without a doubt that she had meant to say "Only those of the blood," and had pulled herself up just in time. Well, it seemed—if suppressions and hesitations went for anything—that now it was a matter not to be referred to between us again.

Blindly I made a step forward, fumbled, caught her in my arms, I kissed the lips that for the moment feigned resistance, then clung passionately to mine.

CHAPTER X

I Take Over

THROUGHOUT most of that day the ether must have been super-heated with the messages between worlds. In the administrative centers of the three confederated planets men must have been working feverishly, preparing to deal with a menace whose actual purpose, whose identity even, had not yet become manifest.

To us sealed up in our space-ship hurtling through the void to our destination nothing of this was known. It was not until the dinner hour that night that the first repercussions of the trouble became apparent.

Supremely happy in my new-found love I had taken my seat at the table to meet the ardent glance from Jansca's glowing eyes and the approving look from her father, whom I had already seen and talked with. I noticed as a thing of little moment that Hume's place was unoccupied.

Jansca leaned across the table and said something to me. I was about to make some light answer to Jansca's remark, when a finger touched me on the shoulder and I heard my name spoken. It was one of the officers.

"Captain Hume would like to see you at once, Mr. Sanders," he said.

"Oh, well." I shrugged my shoulders.

"I suppose I'll have to go."

I faced Jansca and she leaned across to catch my words. "My dear," I said, "I'm afraid I'm wanted. Apparently urgently."

"Go," she said swiftly. "Don't wait. I think I understand." Her hand, reaching across the table, caught mine and gave it a gentle pressure.

I met her eyes. There was something in them that startled me. Agony, fear, anxiety—all somehow mixed together. Then I rose to my feet and swung off behind the man who had summoned me.

Hume sat before a desk littered with papers. He raised a grave face as I was ushered in. "Sit down there, Jack," was his greeting. Then to the officer who had conducted me, "Insulate us against all outside interference."

"Man, what is it?" I cried.

His brow furrowed into lines. "Jack," he said earnestly, "I'd give a lot to be able to answer that question. But perhaps this may tell you something."

He pushed a message form to me. It was written in plain English and it had been sent out from New York headquarters of the Earth division of the Interplanetary Board of Control not two hours before.

I stared at it, for it began with the triple call of urgency, that call we seldom get more than once in a generation. The gist of it can be given in a sentence. It was a general call to all space-ships to rendezvous at the nearest Guard-ship base as quickly as possible and wait for escort before proceeding to their destinations.

"Well, what do you make of it?" I asked.

For answer he passed me another wad of sheets. The top one was a similar message, sent from London. It was timed a few minutes later. I turned to the others. One was from Shangun, the Venusian capital, in that planet's international language. The third message also indecipherable, was, I guessed from the office of dispatch in Tlananian, the language of two-thirds of the Martian peoples.

"There's no doubt about the urgency of the matter," I said slowly. "The fact that the Venusian and Martian messages have been broadcast in their own tongue shows that to my mind. They couldn't afford to waste the time to translate them into international code."

"Or meant them solely for their own ships, knowing Earth messages would reach liners like us," Hume said with a puckering of the forehead. "But what's behind it all?"

"The space-visitors—the things—people—that were responsible for the trouble on *M.E. Seventy-five*. "Perhaps I'm wrong. I hope I am—it looks as though something has happened, some new development that menaces the safety of every space liner from the three planets enroute at the moment. Such a thing has never been heard of since space-travelling became an accomplished fact."

"But what are you going to do? Is this the crisis your instructions cover?"

"It's hard to say. Looks to me like a matter for individual judgment. But at present, providing there are no further developments, I can make no move in any direction. You have already got your orders. I think in the circumstances you will be wise to abide by them."

"I've changed course already." He pointed to the dial-chart, where the quivering pointer showed us edging off at an angle from the red line that had hitherto marked our route to intercept the orbit of Mars. "Also, our locators are sounding space to pick up the nearest Guard-ship. It will probably be a Martian one now, we're so far advanced on our way."

"Whatever it is does not matter as long as it is a Guard-ship," I said wearily. A heaviness had come over me, a weight on my heart.

HUME shot a glance at me from under his tired drooping lids. "Sick of it, already," he said. "Ah, well, you've no responsibilities, no—"

"You're wrong," I cut in before he could go further. "I have responsibilities, one big one at least aboard this ship."

"Aboard the *Cosmos!*" he exclaimed. "What . . . who is it?"

"Jansca," I said. "Jansca Dirka."

"You mean that, Jack? Is it fact or merely a hope?"

"A fact accomplished. We agreed only this morning that our paths lay together. Her father knows and has approved."

For one long second he looked at me, then across the table his hand reached out and gripped mine heartily.

"I understand," he said at last. "Of course our safety means more to you perhaps even than it does to me." Then, almost under his breath. "But a *Dirka!*"

I caught the word. "Why a Dirka?" I demanded. "What is strange in that?"

"Your luck. Call it that. The Dirkas are the nearest to a race of kings Mars has had in a thousand years. But, Jack, coming back to immediate urgencies, what are we to do?"

"Follow instructions. We can't make any other preparations, for we don't know what we may have to face."

"Our armament—" he suggested tentatively.

"What have you in that way?"

"The two rays—heat and the repeller rays. The former won't function too well in free space, I should imagine."

"Why not? It doesn't need an atmosphere. It will go where light goes. We'll see—rather I hope we won't have the need to see. We—"

There came a warning crackle, thrice repeated, from the sounder at his elbow.

"More messages," he said wearily. "Manners, take them."

My conductor made the sundry adjustments that allowed the door to be opened. It was a messenger from the transmitting room—the *Cosmos* was big enough to have a separate one of her own—with a sealed envelope in his hand.

"For Mr. Sanders," he said. "I was told he was here."

Manners passed it to me, the messenger sped away and the insulating barrage went up again. As I thought, it was from Harran.

Have reason to suppose that concerted attack is to be made on all space-ships. Possible invasion of three planets projected. Confirm general rendezvous order. All Guards are to hold in readiness for immediate duty. All emergency regulations to be put into operation forthwith. No private messages to be transmitted from space-ships or if received aboard to be delivered to addressees, except under direction and at discretion of Guard until further orders. Emergency regulations in force from moment of receipt of this message. (Signed) Harran—Tellus, Tambard—Mars, Clinigo—Venus.

I thrust the translation over to Hume. "You had better read this," I said.

Slowly he read it through and as he read his face blanched. At the end he handed it back to me. "It means," he said, "that you are now in command.

"It means that," I agreed. "But it means more—that you and I and all the rest of us must work together for the safety of our ship and passengers."

"Yet," he said heavily, "there is so little we can do."

I nodded. "Arm your men," I said. "Serve out your ray tubes at once. Are all your officers trustworthy?"

"Every one of them."

"I want them paraded at once—here. Would you care to advise them or shall I?"

"Better you, Jack. I won't cavil at what you say or do in a time like this. About the operators. Had they better come too?"

"Yes—all except the men on duty."

He called Manners and gave his orders and soon the emergency signals were sounding in each man's quarters.

ONE by one they came to the room—the three officers—the apprentices who were actually junior officers in training—the purser, Parey—the doctor and others. All told there was a round dozen of them.

Hume wasted no time in preliminaries. "You've been called here," he said, "because of certain matters of importance with which you should be ac-

quainted at the earliest opportunity. What they are Mr. Sanders will explain."

I saw curious eyes turn wonderingly towards me. Even Parey, who knew who I was, knitted his brows. I pinned my Guard's badge in the lapel of my coat where it was plain for all to see. Even then I could see most of them were still frankly puzzled.

I gave a brief sketch of the condition in which we had found *M.E. Seventy-five* —there was no need to enlarge on that as it was already more or less common property amongst the after-guard—and added that similar things had happened to other space-ships.

I insisted that as yet we did not know anything about the motive behind these visitations—one could hardly call them attacks—and certainly had no idea from which planet the vandals had come. Then to round everything off I read out the message signed by The Three. I finished, and glanced round the little company.

"Any questions?" I asked. "We may not have the opportunity to ask or answer them later."

Parey caught my eye. "Does this mean, Mr. Sanders," he said, "that you are in absolute command here?"

"It means," I said deliberately, "that I am responsible to the Interplanetary Board of Control for the safety of this ship and her complement. If anything goes wrong it is I who will be to blame. But let us have no talk of absolute or any other kind of command.

"Captain Hume and I have discussed the matter thoroughly between us and are agreed, as I want you all to be agreed, that unless each man does his utmost we may fail to pull through. It may hearten you to realize that in a thousand ships all up and down the void this message is being repeated and similar scenes enacted."

The first officer, Gond, took a step forward. "I think I can speak for the others. What you say goes with us, the more so as Captain Hume is backing you up. That's a mouthful, I think."

I smiled at the quaint archaisms in his little speech but I could not smile at his sincerity. It was too affecting for that. A murmur that rose from the little group showed how well he had expressed the sentiments of all of them.

"That's that then," I said. "Captain Hume, will you take over, please?"

CHAPTER XI

The Inexplicable Incident

MY further duties took me half an hour or so. Then I was free to go about my own small concerns.

Dinner had long since been ended and the saloon was bare and empty. Knowing the long hours the kitchen staff put in, I did not feel like giving them extra trouble in serving me a late meal.

I slipped down to my cabin, drew a glass of water from the faucet and dropped an Oxcta pellet in it. I drank the resultant mixture and felt all the better for it. But, I warned myself, it would not do to make a regular practice of this. Despite what Hume had told me —that it was not habit-forming—I had no wish to put the matter to the test.

It was too early to go to bed yet. I wanted time to think things out and if possible formulate some plan of campaign. Since I can always think better with a pipe in my mouth I filled and lit one.

The result of half-an-hour's intensive thought was zero. When all was said and done the initiative did not lie with us but with those invaders out of space and until we learnt a little more about them and their objects I could see no use in speculating.

Was it possible, to borrow a phrase from one writer who one hundred and fifty years ago forecast something of the sort, that we were being examined in much the same impersonal fashion as a man will examine infusoria under a microscope?

A soft yet penetrating rap sounded on my cabin door and brought me out of my reverie. Jansca was standing there, mild perplexity and alarm in her eyes.

"Oh, Jack," she said almost breathlessly, "I've been looking for you and wondering. Then I saw your light and knocked."

"Come in," I said. "Come in, dear. I've been here some time."

I shut the door and threw the insulation switch. I was getting jumpy, taking precautions that a week before I would have laughed at.

"When you left the table and did not return I feared something was wrong," she said, looking up earnestly into my face.

"Nothing was wrong with me."

"No?" Her fair brow wrinkled. "But there have been comings and goings, a certain amount of activity amongst the officers that made me think—" She stopped abruptly and looked to me to supply the end of that truncated thought.

"Made you think what, Jansca?" I said encouragingly.

She put her two hands on my shoulders and looked me straight in the eyes. "Dear," she said, "tell me what is wrong, if not with you, at least with things in which you are implicated."

"Jansca," I said gravely, "sit down."

She obeyed but flung me one quick glance of interest as though already she had glimpsed something of what I had to tell her.

"This," I said, "is between ourselves. It must go no further than you, not even to your father. Will you promise me that?"

Her face glowed. "Where you and I are concerned, Jack, there is no need of promises, given or taken."

That was good hearing, and I said so. "But, Jansca, what I wish to impress on you is that I am revealing to you secret matter, messages that have passed and will be passing between myself and the Council of Three."

Briefly I told her, omitting nothing, stressing nothing. She did not look as grave at the end as I had expected.

"It follows on what we already knew," she said simply. "It may mean trouble for our worlds or it may be something that can be dealt with very easily once we understand the reason behind it. But, dear one, does this mean that when we reach Tlanan, if we do in safety, you and I will be separated for a time?"

"I hope not," I said with truth. "If things were left to me I would marry you out of hand and make the rest of my space-voyage a honeymoon."

"A honey-moon?" For the moment she seemed puzzled, then the meaning of it dawned on her. "Of course," she said brightly, "that is your Earth-term for the period of adjustment. It is a sweet phrase. Sometimes I wish we Martians were a little less practical in sentimental matters and a little more sentimental in practical affairs. Strange that we should so reverse things."

"We can all teach each other something," I told her. "We all have much to learn. Perhaps, by mixing as we do, we planetarians may yet evolve a race as noble as it is good."

She smiled at that. "Too much to hope for, prophet mine. Men and women are

[*Turn page*]

MEET THE ONLY RACE ABLE TO CONQUER THE STARS

IN

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much the same the planets over."

"Well, we needn't worry about it, as long as we're happy in ourselves," I remarked. My thoughts leaped off at a tangent. "Jansca, beyond that little knife you carry in your girdle have you any weapon of defense?"

"Do I need one?" she queried.

"I don't know," I said frankly, "but it's just as well to be prepared. Can you use a ray tube?"

"I can use anything," she said, "once you have shown me how."

WITHOUT more words I took down the case containing the charges and the duplicate tube. She had seen such before—the ship's guards carried them on every space-boat—but she had never held one in her hands and had no idea of its mechanism. But within a very few minutes she had acquired as complete a command over the weapon as though she had been handling it for years.

I loaded the tube, gave her an extra clip or two of the charges, advised her to conceal it in her dress somewhere.

"Now," I said, as she slid it out of sight, "my mind's at rest. At the worst you have the means at hand to defend yourself if necessary."

"I wonder if it will ever be necessary," she said softly. "I hope not. Are you coming up on deck for awhile, Jack? It wants an hour or two yet of retiring time. We can sit and talk and perhaps find pleasure in each other's company, if not forgetfulness of what hangs over us."

"Jansca, my dear," I said chuckling, "you seem to be taking rather a pessimistic view of the situation."

"And you," she countered, "who should be that way inclined are almost cheerful. Missing a meal seems to do you good." As though her own words had brought back recollection she dropped her bantering tone. "Oh, you must be starving and here I have been keeping you from getting anything to eat."

"I don't need food," I told her and pointed to the empty glass standing on the ledge beneath the faucet.

For a moment she looked puzzled, then took up the glass—some of the dregs were still in it—and held it close to her nose.

"Ah," she said, "I understand." There came a little pause, just the merest hesitation. Then, "Jack, it is years since I last tasted Oxcta. Do you think tonight, seeing this is a special occasion, that a little, one sip even would be allowed me?"

"Of course," I said without thinking.

Five minutes later we made our way up deck. Heads turned and eyes followed us for I think the news of our impending mating had somehow got about on board, and interested people in us.

I do not know what Jansca and I talked about. We chatted idly as lovers will. We deliberately avoided all talk of the future that was likely to impinge on that dubious thing that menaced the Universe if we were to believe the warning of the Council.

A man came mincing down the deck, one seemingly wrapped in his own thoughts. It was the carefully selected steps that made me think it was Nomo Kell, though for the moment I did not recognize the man. He wore some quaint kind of headgear, rather like a cap with a visor and earflaps, that I do not remember having seen before. Though the ship's heaters kept the temperature at normal he was muffled to the chin in a coat of light shiny material.

"Nomo Kell must be feeling cold," I remarked to Jansca. "See how he is wrapped up."

She did not answer in words, but her hand—we were very close together—tightened warningly on mine. Of course it was no more than coincidence that he should glance up at that exact moment and shoot a deliberately searching look toward us. Yet Jansca's warning grip, coming at the same instant, sent a stir of uneasiness through me. I waited until he was out of sight.

"Jansca," I said, "do you think he could have heard me?"

She gave the tiniest shrug to her shoulders. "Who knows?" she said ab-

sently. "At least I thought it wise to stop you before you said more."

"But," I objected, "there is no way he could have heard."

"Audiophones," she reminded me. "That cap he wore could easily have concealed a pair."

I did not quite agree with her. The audiophones, after all, were attuned to special receivers. I was on the point of explaining this when of a sudden it struck me that the heater must have developed a defect, that some of the cold of space was trickling through our shell. Perhaps Nomo Kell with a greater sensitiveness had become aware of this before we had.

"I think," I said softly, "that our friend knew what he was about. Jansca, it strikes me it is getting cold."

She did not answer, and I turned my head to see why. Her hand had suddenly gone chill in mine. I gasped. Her head had slumped down on her breast, fallen in such a way that it would have seemed the natural outcome of her nestling against me had it not been for the iciness of her hand.

A great horror crept over me, a feeling of utter lassitude. Through split fractions of a second—too small to measure by any accepted standard of time, though they felt like hours—the advancing tide of chill torpor crept over me, numbing all my faculties.

With horror I realized that we were in the grip of that mysterious force that had sent more than one space-liner floundering, a derelict, about the void.

And at that all things seemed to go misty before me. It was as though a veil of mist had been drawn down between us and the rest of the ship, shutting me out from sound and sight and consciousness of all other life.

CHAPTER XII

The Space-Raiders

BUT this phase must have been merely momentary. For a reason that became apparent later I did not entirely lose consciousness. I must have trembled on the brink of coma for an instant, then the rising tide of life came flooding back through my veins.

I felt the slight stir of movement beside me, tried to turn my head, discovered to my great surprise that I could. I found myself looking into Jansca's wide expressive eyes.

"Darling, are you all right?" I exclaimed.

"Yes," she said quickly. "But what has happened?"

"Can't you guess?" I said.

"Oh!" There was an odd catch in her breath. Her face hardened as she flung a glance about here, saw all the others on that deck slumped down in their chairs.

"The space-raiders," she breathed. "We are in their hands. But I thought the cold . . ."

"So did I, Jansca, but for some reason we've managed to fight it off apparently. It's a puzzle."

I made a movement as though to rise but she caught me by the arm, dragged me back.

"We must remain as we are, pretending to be asleep—unconscious—like the others. If we move we may blunder into something, gain nothing, lose everything."

There was wisdom in her suggestion even though the forced inaction irked me. She caught my arm again, so tightly that I gasped.

"What?" I said. "What is it?"

"Can't you see it?" She pointed to the quartzite windows that gave us a view of empty space and the stars beyond. Only now it was not empty. Something that might have been a wisp of smoke or the drift of thin rain seemed to be blocking the windows. Then I saw that it had blotted out the stars. It was the ship of the space raiders!

More correctly we did not see it. We had no means of knowing that it was there save that it interposed between us and the stars and hid them from our vision.

An idea came to me. I closed one eye.

Dimly then I began to see a form, a cigar-shaped thing, the space-ship of these strange entities, resting in mid-ether, so to speak, side by side with our own vessel. No doubt its connecting port was already clamped against our port, which could be opened on the outside by the emergency manual machinery.

I opened my eye, and stared at the shape beyond the quartzite windows with the sight of both eyes. The shape was no longer visible. It had become absorbed in the blackness of space. But I knew it was there.

"You see?" I said. "You understand what it is?"

Jansca nodded. "I can guess at the principle by which they make themselves invisible. But what I can't yet understand—"

She did not complete the sentence. Instead she slumped down in her chair, releasing my hand as she did so. I took the cue from her. I could not see what it was that had alarmed her and I dared not raise myself in the chair to find out.

I did not have to wait long. But what I saw seemed for the moment so monstrous and incredible that I could hardly believe my eyes. A procession of bodies was advancing along the deck, the bodies of those officers who should at this time of night have been in the control room.

The eerie thing about it all was that the bodies were seemingly floating in the air, at a distance of three or four feet above the deck. While the head and legs were more or less on a level in each case the middle part of the body sagged, dipped or drooped.

For a split second I stared, forgetting that I was supposed to be unconscious. Then quickly the meaning of it all came flooding back to me, and with it the memory of that queer tale—which I had half-disbelieved at the time—told to us by Mrs. Galon on board the *M.E. Seventy-five.*

The unconscious figures of the officers were being carried! Carried by those invisible entities, whom, for want of a better phrase, we called the space-raiders.

The procession came closer, drew level. At the head and shoulders of each of our men I could see now a vague misty outline, a thing that flickered uncannily in the glare from the stored-sunlight tubes that lit the deck.

Neither Jansca nor I made a movement. We saw the unconscious men deposited in vacant chairs, there was a moment's wait, then came the passing in front of our eyes of those flickering misty things. There were eight of them.

Jansca made a slight movement. She had a tiny handbag in her lap, a little thing of light and glittering metal and as she stirred it slipped to the floor with a tinkling clatter. Foolishly she bent to pick it up before I could stop her.

IT was as though several columns of mists opposite us stood still for an instant, then began to advance towards us. A chair was in the way of the oncoming entities. I know that because I saw it pushed to one side.

I think I must have lost my head. I sprang to my feet, drawing my ray tube as I did so, and levelled it at the nearest mist-like figure. In my agitation I loosed the full charge.

There came a spurt of light and I staggered back, half-blinded. But where the mist had been a moment before there was a tumbled heap on deck, something whose outlines were rapidly thickening and taking shape. As though a body were being molded there under our eyes.

Jansca must have sprung to her feet a moment after me, for almost on the heels of my discharge came another spurt of light from beside me and the almost inaudible click of the ray-tube mechanism. I did not look to see what damage she had done, but tried to keep my eyes on the other mist-wraiths. The very vagueness of their outlines endowed them with a kind of will-o'-the-wisp quality that was in itself disquieting.

A moment I waited—expecting I knew not what diabolical force to be loosed on us in reprisal. But nothing happened—and then abruptly the swirls of mist were vanishing up the deck in the direction of the control-room quarters.

Ray tube in hand I started in pursuit, Jansca panting along beside me. And as I ran I flicked the button of my weapon. We did not wait to see what became of the things that fell at our feet, but kept on, for I did not know what damage the others might do if we did not keep them in sight.

The door of the control room opened and closed uncannily as we came abreast of it. It opened again the very next instant and something came hissing out. What it was I could not see—either because it too was invisible or else moved too swiftly—but it passed between us and crashed against the opposite wall of the deck. A huge wet splash appeared on the Marsonite surface, as though someone had cast a bucket of water there and the air seemed of a sudden to have turned icy.

I breathed. "Jansca, stay here! You mustn't take the risk."

"That's for me to say," she gasped with a sob in her voice.

There was no time to argue with her. Feeling that we were taking our lives in our hands I dashed in through the open door of the control room, expecting every second to find another icy missile, better aimed this time, hurled at us. But nothing happened.

To make doubly certain we followed the descent down to the port against which they had linked their ship. For some reason the light here had failed but we blundered on. Then, with the most surprising luck in the Universe, I blundered into something. It felt, soft, and cold and repellent to the touch, like a dead body, save that there was a jelly-like flow of it away from under my hand.

In my horror I flickered the button of my ray-tube. The catch must have slipped somehow, for I don't think it could have given a full discharge. I heard an odd sound like a thin wail, there was a rush of cold air past me. Then as something creaked under my feet I realized that we were on the edge of the passageway our visitors had clamped against the port of the *Cosmos*. I drew back abruptly, pulling Jansca with me.

The planets know what would have happened had I not done so. It was purely an instinctive movement, for I hadn't time to stop and think that the stranger ship would probably cast off at once. Yet this is much what must have happened and had I not pulled back then another few seconds might have seen us hurled out to our deaths in space.

I heard a creaking almost at my feet and blindly flashed my ray-tube in the direction from which the sound came. I know now, what I did not realize at the time, that it was the preliminary movement of casting off. But what I did realize the very next instant was that the air of the *Cosmos* was beginning to whistle off into space. I got the port closed just in time.

Panting I leaned against the port through which we and the whole ship's company had nearly come to our deaths, striving to get my breathing back to normal. Jansca, who had been further back than I, had not fared so badly. Her cry of horror roused me.

"What is it?" I gasped.

A quartzite window had been let into the port and the slide had been drawn back, giving us an outlook on empty space. At the moment it framed a picture that I shall remember to my dying day.

A huge space-ship, larger than anything I had ever seen, was slowly taking form before my eyes. It was a glistening monster that would have made six of the *Cosmos*, latest product of the interplanetary genius though she was. But the most appalling part of what we saw was that the stranger vessel seemed to be breaking in halves.

A great gap showed in the quarter nearest to us, a red-rimmed outline, that spread as we watched. To this day I am not quite sure just exactly what had occurred, though I feel that that last flicker of my ray tube must have set my opponent afire instead of killing him outright.

How or why the blaze spread, I cannot say; the only thing of which I really can be certain is that they must have had a store of explosives of unknown potency

on board. For even as we watched the huge ship stretched out like an overfilled balloon and burst into a myriad fragments that whirled and glowed, that faded and passed at last in flickering extinction out into the uncharted depths of space.

THE *Cosmos* bounced like a kicked football and the vibrations of the explosion, soundless though they were, reached out and buffeted us a thousand miles or more out of our course. Jansca and I were thrown against each other and dropped, battered, bruised and breathless, on the dark floor of the passage.

Fumbling for her hand I found it, and helped her upright. For the moment we both gasped in the rarefied air. It was that which reminded me how narrowly we had escaped a terrible death.

The little air left in the passage where we were was thin enough in all conscience and its effect on us was momentarily becoming more pronounced. I felt dizzy and something was wrong apparently with both my lungs and heart. Jansca, used to a thinner atmosphere, was not so distressed. Nevertheless the sooner we got back to a normal pressure the better for us both.

I did not waste words and air in telling her what I wanted but drew her back to the center of the ship. She came staggering, as I most certainly did myself, until a few yards brought us up against the valved door that had fallen into place behind our backs.

After some ineffectual fumbling I found a switch and a tube overhead glowed brightly enough to show me the mechanism that opened the door. I turned the graduated scale, letting the air fill in by degrees.

Jansca still clung to me. Now that the worst was over the reaction had come and it was hard to recognize her as the daring Amazon who had taken a stand beside me and driven the strange invaders from our ship.

I made at once for the control room for I had no idea how the vessel was drifting. It took a few minutes' intricate calculation before I learned what I wished to know. That done it was a simple matter to correct the error and bring the *Cosmos* back to the space-lane she had been following.

Locking the gears so that we could not slew off again I turned away to find Jansca regarding me. "Well, my dear," she said, "is it all right now?"

"I think everything's right as far as this end of it is concerned," I told her, "but there's still quite a lot for us to do."

I took her in my arms and kissed her. "That," I said, "is for the help you've given me. Come on now, my dear, better not waste more time. I'm not sure, you see, whether we killed or merely paralyzed those folk we dropped, so keep your ray tube handy in case of trouble."

Our fears were groundless, however. None of the raiders was left alive. Jansca and I, by some species of lucky accident, had killed all those we struck. There were seven of them, scattered at intervals along the route from the control floor to the spot on the promenade deck where we had first encountered them. Whatever the invisible process, its effects evidently were neutralized by the discharge from our ray-tubes.

We did not linger to examine them however. Either we had not been treated to as big a dose of the anesthetic cold as the *M. E. Seventy-five* or else something had happened to neutralize it very quickly for there were signs as we made our way down the deck that some of the company were already stirring. Hume had slid down from the chair on which they had placed him and was lolling on the deck in a sitting position.

I caught him by the shoulder and shook him. He opened his eyes, blinked stupidly, then lurched sideways as though he were going off into a faint. I caught him.

"Steady on," I said. "Wake up!" And I shook him again.

This time he opened his eyes to their full, stared from Jansca to me in a puzzled fashion. "Ah, Sanders," he said slowly.

He held out his hand to me and with an effort I hauled him to his feet. He

stood there an instant swaying, then with what must have been a powerful effort of will he got himself under control.

"Go on, Jack," he said urgently. "I think I'm all right now. The last I can remember is doing something in the control-room and now I come to and find myself out here. It's not—"

A FLICKER of alarm passed across his face. I guessed what he had left unsaid.

"Those space-visitors we were warned against," I said. "Yes, we had a raid from them, though this time there've been casualties."

"Casualties? *Gods?* Any of us killed?"

"No, the raiders. Jansca and I—"

"But how"—his brow wrinkled—"how in the stars did you escape?"

"I've my own ideas, but they can wait for explanation until later. Meanwhile—do you feel better now?"

"Much." He brushed a hand across his brow and involuntarily squared his shoulders. "This stuff seems to wear off quickly, once one opens one's eyes. But, Jack, the ship!"

"I've set her on her course. The automatic control will carry on. I would suggest, however, that we wake up the rest of your fellows."

He made a movement as though to go off and do it at once. I caught his sleeve. "Stay," I said. "Jansca will attend to that. You and I have other things to do. We've killed some of the space-raiders. Their bodies—"

"Yes?" he said quickly.

"—had better be taken from here. Perhaps you and I between us can get them on to the control-deck. Then we may have the worst of it over before the bulk of the passengers are awake enough to realize what we're doing."

The details of our task can well be spared but it was over and done with and our space-visitors removed to the control-deck in less time than we had anticipated. Jansca too had done her work well. When at last we paused for breath and looked about us it was to find that the officers had trickled back to their places, looking sick and bewildered.

The passengers too were stirring, all aware that something bizarre had occurred while they were unconscious. The guard-bar at the entrance to the control-deck was set, however, and a junior officer stationed there to prevent any invasion of our privacy.

I gave Hume an outline of what had transpired. I could see that he was not quite sure whether to be most impressed by our luck—he called it daring—in clearing the ship between us, or puzzled because the general coma seemed to have passed us by. It was pretty plain to me now why we had not been left unaffected but I did not want to advertise it unduly. I fancied he would agree with me when he knew.

"And now," I said, "perhaps it would be as well to have a look at our bag."

Jansca moved forward with us. I would rather she kept away but she was insistent and for once I did not gainsay her.

An odd sense of familiarity struck me the moment I had leisure to look the dead beings over carefully. Each was clad from neck to knee in a coat of some light shiny material, the head of each was covered by a cap of the same stuff with a mica-like transparency in front for the eyes.

I gasped as I realized where I had seen such garments before. Jansca too recalled for her eyes met mine meaningfully.

I bent down swiftly, fumbled with the visor of the helmet. Inadvertently I must have pressed some spring, for the visor shot back, revealing the face of the dead being.

A cry from Hume brought me round to him. He had been examining the next being and had managed to get the helmet clean off the head. As I turned he was standing with it in his hand, an expression of utter amazement stamped on his face.

"Look!" he said huskily, pointing.

We looked. The wide staring eyes, vacant of life now, were an odd shade of purple, the pupils queerly flecked.

The skin of the face was blotchy red and starting at the forehead and running back to the occiput was a horn-like ridge.

I nodded. "They're all like that," I said.

"Yes, yes," Hume said quickly, "but this particular one—he's not a stranger. I've seen his face before—on this ship."

"I know," I said deliberately. "And his name, in case you have forgotten, is Nomo Kell."

CHAPTER XIII

Rendezvous

HUME nodded. "Nomo Kell, the man you were suspicious of from the first time you saw him. I only wish now," he added bitterly, "that I'd taken notice of your suspicions."

"I couldn't give a name to my suspicion. I felt he was odd, that's all. And all the taking notice in the Universe wouldn't have made matters one whit better. As it is now we know something. We've made a point of contact and we have some sort of a clue to guide us when we want it."

Others of the officers were gathering round now, staring curiously. Gond came out of the control-room, and stopped with a little gasp of surprise. I could see from the man's face that he was itching to know all that had happened and I could hardly blame him.

He was passing by when Hume called him. "Just a moment, Mr. Gond," he said. "We may need you."

Hume himself turned back to me. "Jack," he said, "what should we do with these bodies? It's for you to say."

"Keep one, dressed and all," I said promptly. "It may be wanted for purposes of study. The others we'd better bury in space. Strip their cloaks and helmets first. They'll certainly be wanted for examination."

"Good," he said. He gave the first officer instructions, satisfied his curiosity in part and came back to us. Over his arm were the cloak and helmet he had stripped from Nomo Kell.

"Jack," he said, "you and Miss Dirka may wish to have a talk with me. I know I want to talk with you. My cabin's the most private place on this ship."

I looked at Jansca and she nodded. "All right," I said to Hume. "Lead the way."

It wasn't until we were comfortably seated in Hume's cabin and all precautions taken against outside interference that any of us spoke again.

"What I'd most like to know," Hume said deliberately, "is why you two alone, out of all the ship's company, were not overcome."

"It's quite simple," I said smiling. "We did it unwittingly."

"Well, then, by accident you've discovered some way of combatting whatever it is Nomo Kell's people use, so I think it's up to you to make your discovery public property."

"You and Jansca would be the first to protest against doing anything of the sort."

Jansca made an odd movement of impatience. "Don't mystify us merely to amuse yourself, Jack," she said softly. "I don't know anything more than Captain Hume does of this matter. What is it, my dear? Can't you see we're both impatient?"

For answer I put my hand in my pocket, drew out the little steel box and placed it on the table between us.

"That," I said.

Hume half-started to his feet. *"Oxcta!"* he exclaimed.

Jansca nodded. "I arrived at that conclusion by a process of elimination. Jack missed his dinner. With his usual forethought for others he wouldn't trouble the kitchen staff getting a late meal, so he decided to carry on on Oxcta. I came down to see him, saw the signs of the stuff and asked for some myself. It kept me awake, energized me, gave me a chance to be of help."

"And it seems you were of considerable help, Miss Dirka," he said heartily. "If the Council don't make you an Hon-

orary Member of the Guard, they don't know merit when they hear of it. If Jack won't report you I shall."

"You'd better do it," I hinted. "Mightn't look well coming from me since we're going to marry soon."

"Never mind me, what I do or don't deserve," said Jansca calmly. "Let us get to business."

"What can we do?" I queried.

"We've discovered certain facts," she began. "I suggest we make them public. It may save lives. It will certainly save trouble."

Hume leaned forward across the table, his dark face suddenly grave. "Up to a point you're right, Jansca," he said with the easy freedom of an old friend. "But the main fact, the one that is going to be the most important factor in fighting this menace, is one we can't make public. You and Jack retained your consciousness and were able to make a clean sweep of this ship's crew simply because of Oxcta."

"And," I put in quickly as he paused, "that we can't broadcast."

"No, I'm with you there," Jansca agreed. "I hadn't that in mind myself anyway. But before we leave that particular item let me tell you there is a method of getting over that difficulty. I'm Martian born, Captain Hume is Martian by adoption and Jack here is" —for the moment I thought, shuddering, that she was going to say of Sonjhon blood but she ran on—"going to marry a Martian.

"It's a bond of a sort. When we reach Tlanan, if you'll allow it, I'll see the Council, tell them what Oxcta did for us and suggest a plan. Tambard will listen to me, that I know. We can make a solution of it—no need to divulge the secret of its preparation—and supply it to the fighting forces of the planets."

"Not a bad idea at all," said Hume. "But we've yet to reach Tlanan. Go on, Jansca, I think you've more to say."

SHE flung us a glance of scorn. "You men, with your superior intellects. Didn't your experience on the *M.E. Seventy-five* show you anything, the two of you?"

"The emergency suits!" I cried.

"That's it," she agreed. "It means wearing them day and night but they're built to stand the absolute zero of space at a pinch. And the one thing we know about this anesthetizing cold is that no matter how it is produced it doesn't remain constant."

"Perhaps it could be kept constant. Point one then is the constant wearing of space suits. I'm taking this, of course, as applying only to the fighting forces. Probably all passenger and freight vessels will be laid up if this menace develops to any extent."

"Have you any point two?" I asked.

"And three and perhaps four too," she said. "Taking them down, Jack? Good. Well, log it this way. The space visitors can be killed. We—you and I—have killed them with the ray tubes. Death, accident or injury renders them visible again. Their ships can be made visible by the same means."

"One moment," I interrupted her. "Hume, that helmet and cloak. Hand them over, please."

He did so. There was absolute silence in the cabin while I examined first the cloak, and then the helmet. I had begun by thinking that invisibility was induced by the substance with which the two articles were painted but consideration showed me that in one case at least this could not be so.

I had seen Nomo Kell walking the deck with this self-same cloak on him and the queer headgear that had then attracted my attention had been the helmet with the visor and ear-flaps drawn up. Obviously then this invisibility was not a permanent feature.

In view of that the problem narrowed down to a question of vibrations and this pre-supposed a battery of some sort. Presently I found one, a tremendously light battery of the new Dirac type, small enough to be concealed under the left armpit of the cloak.

Then by accident I discovered that one of the buttons on the cloak acted as a switch by which the current inducing the vibrations could be turned on and

off. I found this out by the simple process of turning it idly. To my astonishment the button pivoted round in a half-turn and the cloak incontinently vanished. I could still feel its weight and substance in my hand.

"You see!" I cried.

Jansca appeared to take the discovery for granted—and as for Hume—well, I fully believe that by then he was past being astonished by anything.

"I've never seen the principle applied before," he remarked, "but it's been more or less common knowledge for years. Curved light, that's what it is, curved so that it flows round the object instead of being reflected back from it. Once you've found a mechanical method of bending a light ray out of its path, you've achieved practical invisibility."

"I won't say you're entirely wrong," I remarked as I twisted back the button and once more rendered the cloak visible. "In fact I think you're right—up to a point. But apparently the properties aren't constant. They have to be activated by the vibrations set up by this battery."

"I'm afraid I don't quite grasp that," Jansca said with a puzzled air.

"It's simple enough," I told her. "You know that human ears, whether they are Martian, Tellurian or Venusian, have a limited range of audibility."

She nodded.

I went on. "Birds and animals can hear sounds that are too high or too low in the scale to make any impression on our eardrums. The same thing applies to sight. Our eyes are attuned to respond merely to a limited range of vibration. Get above or below that limited range and a thing becomes invisible. It is a result that can be obtained mechanically by speeding up the rate of light vibrations."

"Or by slowing them down," said Hume. "Either would answer, I take it."

"I should imagine so," I said a trifle dubiously. "At any rate this little gadget in the cloak apparently works the miracle so I don't see that the rest matters."

"Doesn't it?" Jansca interrupted. "I should think it rather important."

"Why?" I queried, interested. I knew she had a singularly clear sense of perception in most matters and when she made a suggestion it was usually worth listening to.

"Because," she said slowly, "if we wish to combat this invisible menace we must know something about the methods they use to produce it."

I FLUNG out my hands and nodded towards the cloak and helmet on the table.

"We do," I said. "There's the evidence."

"And your last words," she retorted scathingly, "are evidence that you don't quite realize the nature of one at least of your discoveries."

"Go ahead," I smiled.

"In the first place we found that when we attacked these people with our ray tubes their visibility returned slowly and gradually. Therefore the ray has power to neutralize the vibrations that induce visibility. Most probably it breaks the circuit somehow. Is that plain enough?"

"Of course," I said, springing to my feet. "I see what you're driving at. Our ray becomes effective by using a high-scale vibration. It is so high in fact that it can also speed up the vital processes of a human being to the very point of dissolution."

"Exactly," said Jansca. "So the vibrations we are seeking must be below, not above, the range of human perception."

"And now," I said, "the sooner we make our discoveries known in the proper quarters the better for the three worlds. None of us are scientists and our deductions may have to be checked over for errors but the main point is that our ray not only renders our antagonists visible but will also kill them. It is not necessary to kill them. I think they can be deprived of their invisibility by a non-lethal ray of the same vibratory pitch. How's that?"

"An epoch-making discovery, I should imagine," said Jansca with a slightly sarcastic note in her voice. "Jack, suppose you code this information—you

Guards have a code of your own, I believe—and beam it to the representatives of the Council."

I drew my pad towards me, scribbled quickly for some minutes while the other sat silent, awaiting my pleasure. At last I flung down my pencil and looked up.

"I've made it as clear as I possibly can," I said, "though I've had to put some words in English since there is no equivalent in—in the code I use."

"Want to send it yourself?" said Hume in reference to the message. "I'll have the transmitting room cleared if you wish."

"Doesn't matter," I assured him. "The operator on duty can send it providing he sends it as it stands."

"Right." Hume pushed the button, and waited for the answer to come from the transmitting room. Almost immediately the surface of his vision-plate glowed and the voice of the operator sounded in the room. Hume had left his communicator open so that we could hear every word that was said.

"Operator? Captain Hume here. Message to be sent at once. Yes, general call to Guard-ships. Is your vision-plate clear? Good. Here's the message then."

He took the first sheet on which I had written my report—special sheets prepared for the purpose and cut to size—and placed it in a clamp that held it steady against the vision-plate. A few seconds passed, then came the operator's voice through the communicator, "Next sheet, please, Captain."

The process was repeated until the sheets were exhausted, then again came the calm, unhurried voice of the operator, "Message completed, Captain. I'll call through when I get an answer."

The light in the vision-plate surface died, and Hume handed me back the sheets. "You know how best to deal with these," he said meaningly.

I wadded them up, dropped them in a little basin under the water-faucet, and allowed a trickle to play on them. The sheets spread out, dissolved into liquid and passed down the flush pipe into the depths of space.

I was turning back from my work of destruction when the communicator sounded again.

"Message for Interplanetary Guard Officer Sanders, aboard Space-Liner *Cosmos*," came in the operator's metallic tones. "Message begins. 'Space-Liner *Cosmos* required to report immediately at Martian rendezvous base. Signature Tambard.' Message ends."

I whistled softly. I had met Tambard once or twice in the course of my work. A singularly dynamic personality when roused to action, yet one whom it took much to stir. That he should be directing investigations in person away from his own planet suggested that matters might already have reached a stage of greater seriousness than we had imagined possible.

CHAPTER XIV

The Gaudien Base

EXACTLY twenty-three and a half hours after receiving the message we arrived at Gaudien. On board the *Cosmos* things had already reached the stage where it was manifestly impossible to keep the real state of affairs hidden any longer from the passengers.

Rather than have wild rumors racing round the ship I prepared a digest of the situation and had it posted on the various notice boards. There was no sense in pretending there was no occasion for alarm. Instead I called on all to give every possible help to the staff to enable them to maintain smooth running.

My appeal, I fancy, justified the terms in which it was cast by the result it achieved. There was no panic, no sign of alarm anywhere. A touch of anxiety and apprehension I did notice and Jansca reported that she had literally been besieged by questioners. She handled them all with her good-humored Martian tactfulness.

Feeling from the first that we re-

quired someone who, while still one of the passengers, could speak with a certain authority, I had appointed her to the position. He work was simply to keep the social activities moving, and deprecate any alarmist tendencies.

The Council, I was sure, would have no hesitation in appointing her an honorary Guard once my report went in and they had time to study it. Both she and her father would certainly value the silver comet's tail that is the symbol of that honor far more than they would the Interplanetary Guardsman's own badge. After all not one civilian in a million ever qualifies for that honorary award.

To come to Gaudien. Long before we made contact that huge structure of glittering metal, a veritable city in the void, was visible against the background of interstellar space.

In the early days of interplanetary travel it became increasingly obvious that the Guard-ships must have some base in the void to obviate the necessity of having to run for their home planets for repairs and fuel. We Earthlings were fortunate in that in our own Moon we had a ready-made base a quarter of a million miles away. So on the side of our satellite that is invisible from Earth our refuelling and repair depot was established.

Mars, less, fortunate, had to construct such a base in space. The result is a lasting monument to the friendship between three worlds, that banished the last of the ill-feeling which lingered for years after the disastrous business of the War of the Planets.

The plans for the Gaudien base were actually based on designs drawn up so long ago as the year 1929 by Captain Hermann Noordung, a German engineer and authority on mechanics, who was perhaps the first of all Earthmen to deal with the problems of space navigation seriously.

The final result is all the more remarkable when one considers that the greater part of the work was done in free space, that only the nucleus was built on Mars and the rest of the floating base built up bit by bit by men working in space suits of metal, which again we owe to Captain Noordung's fertile invention.

These space suits were necessary at the beginning, since the men had to work in an airless heatless void under remarkably trying conditions. But once Gaudien—for so the base was named after the Martian engineer who played the greatest part in its construction—was completed, the scientists immediately set to work to provide it with an atmosphere of its own.

The huge city in space, for such it was, was alive with lights, light so confusing that only the Guards' captains actually know the meaning of them all. Ordinary space liners usually are content to give the place a wide berth, and when they do not it is because either they are in trouble or in charge of a Guard.

As the clamps closed over our hull and drew it down softly into the nest prepared for it a gangway was run up against our main entrance port, and the moment it was opened half a dozen Martian officials strode through.

I was there at the entrance to meet them and I recognized the foremost one as the redoubtable Tambard himself. To my surprise I saw just behind him the dapper birdlike figure of little Clinigo, the Venusian member of the Council. I had not expected him and the latest news had been that he was on his home planet.

Tambard was tall even for a Martian but he was built so perfectly in proportion that only when one saw him standing beside an Earthman did his real height become apparent. He towered over me and there was a frown on his face that I liked but ill. However, his first words set me at my ease.

"Ah, Clinigo," he said to his confrère with that easy disregard of all titles that marked the Council as men apart, "here is Sanders himself. Clinigo, it is your good fortune to meet in the flesh one of the smartest space-captains in the Interplanetary Service. Tellus has the honor of producing him."

LONG before I had become acquainted properly with Tambard I always fancied there was an undercurrent of sarcasm in words such as these but now I knew him well enough to realize he meant exactly what he said. He was pleased with me, pleased with my poor way of handling things and he said so in the Martian fashion, extravagantly.

Clinigo stepped forward at the introduction with his right hand on his heart in the formal fashion of the Venusian and I brought my hand up smartly to the salute. I was no longer in mufti but had donned my uniform, the skyblue of the Guards with the silver Guard-ship on each wing of the collar and the silver lace design of the planetary system—the badge of my rank—on my left sleeve.

The two stood a little apart after that, ignoring me for the moment as was the custom, while the port chief or his deputy examined Hume's papers. The port authority moved back. Hume handed the initialed papers to the purser. There was a pause, then Tambard crooked his little finger at me.

"Sanders," he said, "we must talk things over. No, not here on the ship, but on Gaudien. I think you have much to tell us that was hinted at in your report. You mentioned others whose words would support your conclusions. Is Hume one?"

"He is one," I agreed.

"And the other? She?" He made the slightest motion of his head in Jansca's direction and I could swear that a smile curved the corners of his mouth.

"She," I said, striving to hold my voice so that it would not betray me. "She, sir, is the other."

"Who is she?" The question was rapped out.

"One Jansca Dirka, the daughter of a director of the Canal Company of Mars," I answered. "She also," I added, "and this, sir, is the more important in my eyes, is my affianced and my invaluable assistant."

His eyes twinkling Tambard turned to Clinigo. "There seems some magic in these Earthmen, Clinigo," he said, "that

[Turn page]

oh-oh, Dry Scalp!

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in a few short days one of them can not only win a Martian maiden but can fire her with his own spirit, so that she can qualify for an honorary membership of the Guard."

Clinigo smiled a little. I think he was not very interested in us save in so far as the information we had to give concerned him and his office.

"An apt helpmeet, I should think," he said.

Tambard shrugged. I often wondered in the days that followed if there was any possibility of friction between the pair but luckily for the Planets it never came to that.

"Ah, well," said Tambard. "This conference now . . ." He touched me lightly on the arm, beckoned Hume and Jansca to come with us.

Tambard apparently was using with Clinigo the room of an officer in command as an office. At least I saw there, when we came to it, many gadgets that were not usual, some of which bore traces of having been hurriedly affixed and quite recently.

The Martian motioned us to seats but surprisingly it was Hume who first broke the silence. "My ship and the passengers, sir?" he queried.

"Are safe," said Tambard. "The passengers will not get into mischief, for they will not be allowed to land. It is scarcely worth while. All of you will be on your way to Tlanan again before thirty of your Earth minutes have passed."

Good news, I thought. Then a sudden doubt assailed me. Was Tambard including me in what he said? I would dearly have liked to have asked him and cleared the matter up at once, but I did not dare. He addressed himself first to me.

"Start from the moment of sailing," he said, "and tell us all that has the slightest bearing on the case."

I told him everything, suppressing only those matters of purely private concern which had transpired between Jansca and myself. And, of course, seeing Clinigo was present, I mentioned nothing of that purely Martian secret, the Oxcta pellets.

Both members of the Council listened attentively to the end, when Clinigo spoke for the first time. "An admirable exposition," he remarked. "Even more admirable is the fact that despite its condensation you have been able to add little of material value to your message."

TAMBARD sat silent and thoughtful, his fingers drumming noiselessly on the table-top in front of him.

"An odd situation," he said at last. "Frankly—we can all be outspoken here and know that nothing goes beyond the walls of this room—we don't quite know what to make of it. If an attack had been made on any of our ships we would know what to expect. But so far nothing of the kind has occurred. The only bloodshed, the only destruction achieved rests at our door. Or yours rather."

"One moment," I spoke. "That explosion, when the stranger ship flew to pieces, to my mind throws a sidelight on things. I reason it was the ignition of high explosives that caused her end. And, I'd say, those high explosives, be their nature whatever it was, were intended for a purpose."

"I agree," said Tambard coolly. "But these explosives were not used against our ships. Your space-visitors—we must call them that for want of a better name—boarded each ship they came to and seemingly left it in the state they found it. The obvious conclusion is that they boarded it for purposes of examination."

"Infusoria under the microscope." For the life of me I could not help using that century-and-a-half-old phrase of Wells.

Tambard looked puzzled, so I explained the allusion delicately, of course, for *The War of the Worlds* as a book is ever a sore point with your Martian.

"Quite so," said Tambard when he had grasped what I meant. "I would agree without reservation if we seemed to be dealing with vastly higher intelligences than our own. They are using forces of whose existence and of many of whose methods of application we are already aware. Given time our scientists can puzzle them out."

"The point," said Clinigo, "is that we may not be given time. Tambard, why are we being studied?"

"Our ships? It may merely be in a spirit of scientific curiosity though I doubt that. Most probably we are dealing with spies."

"In the message I received," I interposed, "there was a phrase referring to a menace to the Universe."

Tambard's face went grave. "That is so," he agreed. "I was responsible for that. It was my suggestion, but Clinigo here agreed with me and Harran is already of the same opinion."

"May I ask a question?" Jansca spoke and Tambard nodded.

"I'm not sure that any can tell me," she said daringly, "but I should imagine that we might arrive at some more definite conclusion about the menace we may have to face if we knew with whom we are to deal. Can you suggest from where the space-visitors are likely to have come?"

"They do not come from Tlanan, Venus or Tellus, of that we can be certain," the Martian returned. "The major planets—such as are inhabited—possess no peoples so far advanced in space-navigation. There remain to be considered then but two possible planets, the outermost and the innermost."

"Pluto and Mercury!" I exclaimed.

"Exactly," said Tambard. "Of Pluto we know little, of Mercury even less. One is too far from the Sun, the other too near it to allow observations to be made with any degree of accuracy."

"Of the two I would favor Mercury more," I told him. And when he looked questioningly I explained what I had learned of Nomo Kell. Apparently he had not paid much attention to that part of my story. Now I stressed the point, particularly what Parey had told me about the argument over the condition of Mercury in which Nomo Kell had flatly declared the others did not know what they were talking about.

"There is always the possibility," he said thoughtfully. "I wonder if we could learn anything from the body."

"The dead space-visitor we kept on the *Cosmos?*" Hume queried.

"Yes," said Tambard. "Only he's not on the *Cosmos* now but down in the laboratories. Our scientists—"

He stopped abruptly. "Excuse me," he said, and turned and whispered something to Clinigo. I saw Clinigo nod and rise to his feet. He sauntered to the door and passed through. Tambard turned to me.

"Clinigo and I agreed," he said with a curious half-smile, "that it would be well if he went down to the laboratories and had a look about himself. He can use his eyes—he is trained to observation of that sort. Now—someone here has something to say that had better be said before Clinigo returns." Tambard looked meaningfully towards Jansca.

CHAPTER XV

The New Command

I have," Jansca said simply.

I stared at her, then turned to Tambard. Somehow, during the course of conversation, a word, a sign must have passed between them, something that a Martian alone could understand.

"Speak on," Tambard advised her. "Time is short."

"It's only this," she said hurriedly, "though it's rather important. The reason why Jack"—she nodded towards me—"and I were not stupefied when those people boarded the *Cosmos* is that we'd each had some Oxcta not long before."

"So that's it," said Tambard gravely. "I thought from the mention of emergency suits as a temporary measure"—he was referring to a line in my message—"that there was something more to come. But—Oxcta!"

He looked from me to Hume and the latter colored. "I'm afraid," he said apologetically, "that the fault was mine. I gave it to Sanders."

Tambard stared at him a space, then his stern face relaxed. "You have the right to carry it, of course," he said.

"You've acquired that right because of your wife . . . a Tlananian lady. You also have the right to exercise your discretion as to whom you should offer it."

He turned easily to Jansca. "You had your own supply, I suppose?" he said.

Jansca shook her head. "I got mine from Jack."

"Ah." Tambard's eyes came round to me. "And you got it from—?"

Hume pulled himself upright in his seat. "From me," he said. "I used my discretion."

For a long second Tambard brooded over us. But again Jansca saved the situation.

"I don't think there's any question about the rights or wrongs of the case," she said with a touch of indignation. "Jack is perfectly entitled to Oxcta, even more so than Captain Hume."

"He has not yet married a Martian wife," Tambard reminded her.

"But"—Jansca's voice quivered a little—"but he is of the blood—a Sonjhon!"

Hume uttered a wordless exclamation. Tambard stared at her long and thoughtfully.

"You did *that?*" he said with a note of perfect amazement in his voice. "You thought enough of him for that?"

"I would do it again. But"—her voice faltered—"I did not expect so soon to have to make it known."

Tambard sighed. "Perhaps it is just as well," he said softly. "It may simplify matters considerably. However, dismiss the matter of the Oxcta from your minds for the present. I'll attend to all that it implies. Will you take over a new command, Sanders?"

I hesitated. A command of a Martian Guard-ship fleet, temporary though it might be, was not a thing lightly to be undertaken. Even had I been a free agent I would have debated before accepting. As it was even though on vacation I was still attached to the Earth service.

"There's nothing I'd like better," I said at last, "but I can't decide of myself without Harran's permission."

"Harran has already given it," said Tambard patiently.

I think I must have looked some of the chagrin I felt. Duty tugged me one way. The thoughts of my interrupted holiday and of Jansca drew me the other.

Tambard looked up at me thoughtfully. "Still," he said, "unless the unexpected happens you will not be required immediately. I would suggest you resume your interrupted voyage to Tlanan in the *Cosmos*—it might not be wise to follow your original intention and proceed to Venus—and wait there for orders or developments, whichever come first."

"I shall do that," I said stiffly. A holiday of this sort with the hourly prospect of having to part from Jansca at a moment's notice was not so inviting as it seemed at first glance.

"A pity," he said musingly, "that you are not mated. It would solve many difficulties."

"And if we were mated," Jansca asked interestedly, "what difference would it make?"

"I could give you place with your lord on his ship as second in command," Tambard said steadily. "It is no new thing. You are too young yourself to remember the old custom, but I—"

HE stopped abruptly and his eyes clouded. It was then I realized how old Tambard must be. If truth be told he was well into his second century. Then he would remember, might even have participated in those wars that twenty or thirty years before the coming of the Earthmen to the Red Planet had welded the Martians into one nation. Wasn't there some story—dimly recalled—of his having lost his wife in that conflict?

"I will take that place then," Jansca announced with decision. "That is"—abruptly she remembered that I had not been consulted and she dropped her eyes—"if my lord is willing."

"Jansca," I said, "I'm an Earthman and not so conversant with your ways as I might be, so that must be my excuse if I say anything you think I should not say. You're a dear to make such a sug-

gestion and I'd jump at it if it wasn't for the risk."

"What risk?" she asked.

"The risk you would run if you came with me."

"The risk you would run yourself?"

"That is different."

"The difference," she said slowly, "is that with you I would be sharing in your danger. But if I did not come I should have to remain—no, not at home, for it would not be home without you—at Tlanan and eat out my heart with anxiety."

I placed my hand on her shoulder and gently pressed her back into her seat. "Tambard Mitaka," I said formally, "Jansca Dirka will, as my mate, take second command."

Tambard inclined his head in acknowledgment. "It is carved in stone," he said, using the phrase that to a Martian means a decree is unalterable.

Jansca gave me one look, caught my hand and pressed it in her own.

"Sensible man," came in a rumble from Hume.

Accident or chance, call it what you will, had timed it all nicely. Another second or so and the door opened and Clinigo entered. I took it from his expression that he had not been as successful as he had hoped.

"I went—I looked—I saw," he said, "and I confess that I am baffled. He is like no man of any of the planets I have ever seen. A ridge of horny substance across the head, and purple eyes. No one has ever seen such a being alive."

"Nomo Kell," I said quickly. "I told you of him."

Clinigo nodded. "So you did," said Tambard. "Yet Nomo Kell was posing as a Martian."

"Of twenty years residence," I reminded him.

"About the time we were getting used to you Earthmen and your strange divergences of racial types," Tambard said thoughtfully. "We were astounded at the types that were coming from Earth to visit us.

"It would have been comparatively easy then for such a man as Nomo Kell to have taken up residence and qualified for citizenship. But perhaps if we get his prints and see where they were issued we may be able to trace back. Someone must have sponsored him. If we can trace that person we may get at some solution."

He stood up. "Clinigo," he said, "I think we may be needed more on our respective planets than here. I, for my part, will repair to Mars by the *Cosmos*. I do not want to detail a Guard-ship to take me back. It may be wanted here yet. And you?"

Clinigo smiled, a little sadly I thought. "Your suggestion is good," he said. "I, too, will come on the *Cosmos*. It is to make Shangun on its return trip and should get me home without undue delay. But one thing I would suggest. While the *Cosmos* is stopping over at Tlanan it should take on extra armament purely as a precautionary measure."

"I thought," I said, perhaps unwisely, "that it was intended to call in all spaceships."

"It was," Tambard answered. "But we have reconsidered that since receiving your report. You have shown us a method of combatting them, where before we had none. Also we have decided that there is nothing to be gained by calling all ships in and starting a panic. Still it is for every captain to say for himself whether he will take the risk."

He turned to Hume. The latter smiled wryly. "You needn't worry about me," he answered.

CHAPTER XVI

The Red Planet

MARS glowed ahead in the void, and grew rapidly. Those of us to whom it meant the end of the voyage sighed with relief. What those others who had yet to make Shangun in Venus thought of matters I cannot say. Hume himself assured me he was not worrying.

I fancy he had a hope that perhaps, before it was time for him to resume his voyage, things would have advanced so far that all commercial vessels would be warned out of space and only the fighting machines allowed to take off.

Meanwhile the *Cosmos* had become to all intents and purposes a Guard-ship. Tambard and Clinigo with my assistance had taken over control and one or another of us three was constantly in the transmission room. Messages were coming over thick and fast, and Harran was beginning to warm up the ether with his suggestions. If Mercury were the abode of these intelligences we had encountered, Venus and Earth, being nearer the Sun, were likely to be attacked in that order. Mars would come last of the three.

The main Martian space observatory on Chimos, one of the many asteroids or minor planets in the belt between Mars and Jupiter, had received orders to concentrate all observations on Pluto, the outermost of the planets. No reports had yet come in but somehow we all felt that nothing would be discovered in that direction.

It was the business of the Venusian astronomers to keep Mercury under observation. Not that we hoped for anything startling or even decisive. Mercury has always been an elusive planet as far as observation is concerned; its nearness to the Sun has rendered study of its surface by telescope a matter of considerable difficulty and no space-ship captain has yet been found venturesome enough to conduct an expedition in person.

Our landing at Tlanan took place early in the morning, though already the heat in the thin Martian atmosphere, thin compared with Earth, was beginning to be almost overpowering. Yet when all is said and done it is a dry enough heat, easier to stand than the humidity of Venus.

To prevent regrettable accidents we were all passed through airlocks and gradually accustomed to the differences in atmospheric pressure and it was quite an hour from the time of our landing before we set foot on Martian soil. Tlanan I had seen many times before and always there is something new about the city to charm the eye.

Built beside one of the main canals of the planet's system it has been so constructed and toned that it seems part of the landscape, a landscape that in many ways is reminiscent of Earth scenery in Egypt. All these Martian cities are what one might call dual-purpose constructions, for they are built to be comfortable both by night and by day, very necessary when one considers the great variation of temperature one encounters there in the Martian equivalent of our twenty-four hour Earth day.

Ordinarily I would either have remained on the *Cosmos* during her stay in port or else have taken quarters at one of the various hostels run by the Interplanetary Tourist Bureau. I think it was with some idea now of doing the latter that I gathered up my meager baggage, and was casting about for transport when Jansca detached herself from the crowd and came towards me.

"I've been looking for you," she said. "I was afraid you might have strayed off or done something foolish."

"Foolish?" I echoed with a laugh. "What do you mean by that?"

"Where are you going to stay?" she queried.

"At one of the hostels," I told her. "My purse won't run to anything more opulent."

"You utterly irresponsible Earthman!" she cried. "Don't you know that there is only one place in all Mars where you can stop?"

"No," I said with a faint touch of alarm. Was this some new regulation of which I had not heard? "Where, Jansca?"

SHE slipped her arm through mine. "Where but with us?"

"I don't think I should. The trouble—"

Her face clouded. "Our conventions are not yours, I know, Jack," she said slowly, "but if you wish to give a Sonjhon a deadly insult refuse his offer of

hospitality."

"My dear, I did not mean it that way. But I did not wish to be a source of trouble and inconvenience to you."

She bent swiftly and brushed my lips with hers. "Your habit of kissing," she said softly, "is the sweetest thing that Earth has taught to Mars." She dropped her voice to a whisper and drew closer to me. "Jack," she said tremulously, "time may be short for us. The sooner we are mated the longer we will have to ourselves. Father and I have talked the matter over."

I nodded, my heart too full for words. It was what I wanted most in life and the one thing I was dubious of suggesting.

"That's settled then," she said firmly and, turning, beckoned. For the first time I noticed that her father had been standing back well out of earshot, obediently waiting, great man though he was, until his masterful daughter had said her say and brought me to her way of thinking.

His and Jansca's baggage made a formidable heap beside my puny lot. I was wondering how we would set about removing it when a robot—or to give him his Martian name a Toro—appeared. Much of the menial labor on the planet is done by these mechanical men, though to give them their due the average Martian is not backward in putting his shoulder to the wheel when the necessity arises.

Dirka spoke into the televox apparatus situated in the Toro's metal diaphragm, giving him orders that were picked up by an exceedingly sensitive selenium cell which in some very ingenious fashion operated the mechanism.

The Toro picked up as much of the baggage as he could conveniently carry in his metal hands, and unerringly led the way through the exit doors of the building to the duralmac road outside. A small battery car just large enough to hold the three of us and our luggage was standing outside.

Dirka took the wheel while Jansca nestled in between us and soon we were speeding along the duralmac track at a pace that well-nigh took my breath away. In the void, curiously enough, speeds approaching that of light do not seem to matter. But on the planet's surface a hundred miles or so an hour seemed perfectly appalling.

The ride lasted only a matter of twenty minutes. We pulled up outside a pleasant little house, beautifully shaded by dilium trees with a slope at the rear to the sparkling waters of the Great Canal. A few launches floated on the canal's smooth surface, pleasure boats, the only form of water travel that the Martian knows on his own oceanless world.

Dirka's wife, of course, was no longer living. I would have guessed that from the first even if I had not been told so by Jansca, for no Martian of the upper classes ever travels without his family if it can possibly be avoided. There were only servants in the house, who did the light work, while the rougher jobs were attended to by the Toros. It was a Toro who met us at the entrance and brought in our luggage, and another Toro, of a more highly specialized type, took the car round to some sort of garage.

JANSCA disappeared as soon as we entered the house with the intimation that she would see me at nondal, the local equivalent of our lunch, leaving it to her father to conduct me to my rooms. My apartments were three in all, a bedroom, a sort of study and sitting room combined with the walls lined with shelves containing book-machines, and a private bathroom.

"You may want to bathe after your journey," Dirka remarked as he showed me the bathroom. "You may use it as much as you wish, you understand, providing you do not draw the water from the canal. That is kept solely for culinary purposes."

"Where then," I said, "do you get enough to be so lavish in your bathrooms?"

"Here," he said, pointing to two cylinders which stood side by side over the bath. "You will find there all the water you need."

They looked curiously like gas cylinders to me and I bent forward to look at the wording on the plate of each. It was in Martian characters, however, which I have never learned to read.

"You do not know our language?" Dirka asked. "No? Well this"—he pointed to one cylinder—"is hydrogen and that is oxygen. They are recombined to form water and the process is automatically regulated."

I enjoyed the bath, the first that I had been able to have since leaving Earth. The artificial water, however, seemed to lack something I was used to. Say what we will no synthetic product, no matter how chemically correct is its method of manufacture, can quite equal the work of nature.

Nevertheless there was a freshening quality in the bath that made me feel rest was out of the question. For want of something to do I strolled into the study and sitting room and began to examine the book-machines.

In reality they were reels of fine wire which when run through a machine specially made for the purpose told the story with voices suitable to the characters. One could too if one wished, by pressing a button on one side of the machine, set a series of synchronized pictures moving that added to the verisimilitude of the story.

I may be a little old-fashioned in some ways but I have never taken altogether to the book-machines. A story, after all, is not all dialogue nor is it all acting and one misses that literary touch that flares up so often in the old print books.

I was feeling more or less at a loose end and wondering whether I should light my pipe, when someone knocked on the door. I opened it to find Jansca waiting there for me.

CHAPTER XVII

The Calm Before the Storm

FOR the moment I fancied she was the bearer of evil tidings but one look at her smiling face drove the idea from my mind.

"I hope," she said, almost breathlessly, "that you don't mind my coming to see you? You weren't resting?"

"I wasn't," I declared. "I was wondering how I was going to pass the time."

She entered, shut the door behind her and ran her eye round the room. "So you've been looking at the book-machines," she said. "You won't find much there. What a pity you don't know our language."

"I do in a way," I told her. "I can understand what's being said to me, but read it I cannot. The characters puzzle me."

"Of course." She nodded. "All communications are made in a sort of common language, aren't they?"

"That's so," I agreed smiling. I had an idea what was coming.

"What is it? What is it called?" she asked.

"That, Jansca mine, is a secret I cannot tell even you. Some day soon when you receive your appointment I can make it plain to you—but not till then."

She looked at me with grave eyes. "I'd be the last to try and persuade you to be false to your bond," she said soberly. "Yet it was not mere idle curiosity that prompted me. It was the wish to share in all your knowledge in the hope that I might be able to take some of the work off your shoulders."

"I know," I said gently. A thought struck me. "Has further word of any sort come through on the news-machines?"

"None as yet," she said in a strained voice. "But I fear that this is merely the calm before the storm. Our time grows short. We must make the most of it."

"When. . . ?" I was beginning, then stopped, for I was not quite sure how to phrase my question.

She must have read my thoughts. "When can we be mated?" she said.

"Yes, Jansca. The sooner the sweeter to my way of thinking though I have no wish to rush you."

"Rush me?" She looked prettily puz-

zled for the moment, then the meaning of it dawned on her. "You mean hurry me? You could never do that in this matter. I am too unmaidenly anxious."

I caught her in my arms and drew her to me. "I think you are adorable," I said. "But you have not answered the question."

"A day then, perhaps two," she said. "My father must be judge of that and I would not run counter to his wishes. But no day can be too soon. Who knows but that the destiny of the Universe may be knit up with the course of our love? You and I together can work miracles."

"It is questionable," I said grimly, "whether they are the sort of miracles that might stem the tide of invasion."

"You do not know," she said softly with a light in her eyes. "My father . . . there are things you will be told . . . I should not tell you now." She spoke hurriedly, ending incoherently, as though she were afraid her tongue might betray her into breaking confidences.

Somewhere in the distance a bell tinkled softly, a faint silvery note that brought us back to the immediate present with a jerk.

"Nondal hour," she exclaimed. "So soon. How time has passed."

She glanced in the mirror, passed herself as presentable, then took my arm. She drew me down the spacious hall to the room where the meal was served. Dirka was waiting for us, and his face lit up with smiles as he saw us coming, our arms linked, our faces afire with happiness.

The Martian meal lingers in my memory, will linger perhaps long after most other things have faded. It was the setting and the company that made it memorable, though the course of it for the greater part followed the prescribed ritual.

Our conversation came round by insensible degrees to the matter uppermost in the minds of us all, the possibility of invasion. A little to my surprise Dirka was not inclined to scout the idea. He merely remarked that it had happened before and would doubtless happen again but that he knew of no recorded case where the invaders, even with superior science at their disposal, had managed to establish themselves for any length of time in the conquered country.

"What planet are you talking about?" I queried.

"All of them, I suppose I had better say," he answered with a smile, "but of Venus I cannot be sure. Both Mars and Earth have had their visitations."

"From what planets?" I asked with interest.

HE shrugged his shoulders. "Who knows?" he said. "The very fact of these invasions is buried under the litter of history."

"But," I persisted, "if you know so little of that side of it how can you be sure that actually there have been invasions?"

"Legend, folk-lore, even fairy tales." He met my eyes with a smile in his. "Your own Earth legends are full of such things. That has been my hobby these many years, the interpretations of many of your various races' so-called myths in the light of this theory. I can give you two instances at least."

"What are they?" I begged.

"You have a country on your Earth in the continent called Asia, a land sometimes referred to as the Celestial Empire though it has been a republic for over a hundred of your years."

"China," I said. "Go on."

"Did not their old Emperors call themselves the Sons of Heaven? That may or may not be of value in the last analysis. But the legends of that land are full of tales of dragons, monstrous flying things, breathing fire and smoke and pouring destruction on the country."

"The myths of all our countries have references to them," I pointed out.

"I should be surprised if they had not," he answered. "What could they be but space-ships?"

"Admitting that, what became of the invaders?"

"Any of a hundred things. Some of them may even have survived, have married into an alien tribe and carried on

some of their culture and attainments. Your histories are full of stories of races that have little in common with their neighbors, that still preserve strange rites and ancient customs, that seem at times to have lost a culture that was once theirs."

I thought of the Basques, of the pre-Christian civilization in Ireland, of isolated cultures scattered throughout ancient America. I had to admit that what he said was quite feasible.

"Again," he went on, "scarcely a nation, scarcely a race in your planet but has mixed up in its folk-lore strange tales of bright lights in the sky, of visitations impossible to explain by the ordinary laws of Nature as known to these peoples."

"So much for Earth," I said. "And Mars?"

"Our recorded history goes further back than yours but we have only legends. But it is odd that so many of our legends should agree with yours as though they had a common origin."

It was a fascinating subject. As a matter of pure speculation we could have talked about it all day. But there was another matter, one closer to our hearts, that Jansca and I wished her father to discuss with us.

"We would with your permission be mated before we go," said Jansca demurely. "And, father mine, it is well to bear in mind that the call may come any day at any hour of the day."

"I have thought of that," he said. "I see no ground for delay, since delay would bring happiness to no one. The hour is yours to choose."

She rose from her seat, came to her father, put her arm about his neck and kissed him passionately. He looked startled for the moment, then smiled.

"An Earth custom," he said softly, "but a pleasing one."

We might have said more but almost at that moment, while we were still feeling our way through a rather awkward pause, the communicator wailed. Dirka took up the audiophones and clapped them to his ears, for this was a private set, where converstion and reply could both be kept secret if need be. He listened in silence for a moment before he turned to us with consternation on his face.

"It is Tambard," he said oddly. "He wishes to come right over as he has a matter of extreme urgency to discuss."

"We are at his absolute disposal," I said with a queer tightening of the heart.

CHAPTER XVIII

The Storm Breaks

FIVE minutes later Tambard arrived. I was surprised at the change in him. He had seemed sprightly when I parted from him some hours before. Now he looked as though he had spent a sleepless night and a day of care and worry to follow. He took the seat to which Dirka invited him, but declined all offer of food or drink.

"All communication with Venus ceased two hours ago," he said deliberately. Out of courtesy to me, it may be recorded, he used Earth-terms wherever possible right throughout our conversation. "We have been unable to get a message through, and none of the regular calls from there have reached us. I have been in touch with Harran. Some of the Earth stations report having received weak signals—something about 'attack' and 'invasion' and that was all."

We looked at each other as he ended, seeing the thing we had dreaded coming to pass.

"But that," Tambard went on, "is not all. I wish it were. Harran and I from our respective planets called up our outermost Guard-ships, where they junction with the Venusian lines. They were not acknowledged. There was a silence lasting half an hour. Then came a reply, not from the flagship but from a smaller scout on the edge of the fleet.

"It ran, 'Can transmit but cannot receive messages. Receiving apparatus

hopelessly damaged in fight. Invisible foe, suddenly descending, wiped out combined Guard-ship fleets before attack could be resisted. *M. Ten*, sole survivor, transmitting and heading for Gaudien at velocity."

Tambard paused and again his eyes swept our little circle. "No further details have come through. If *M. Ten* does not reach Gaudien soon we can only conclude that there has been no survivor at all."

"Then," said Dirka, "what is there to be done?"

"Dirka, it is you, through your daughter and her mate here, who may yet save us. We want water, canal water, as much as we can get even if all Mars has to go on thirst rations."

"We'll have to live on the synthetic product if it is necessary to save the planets," Dirka said oddly. "What is it? Atomic power, that you want?"

Tambard nodded. I was frankly puzzled.

"Am I supposed to know?" I asked. "Because if I am to handle this matter I think I should know."

Tambard told me. "We have perfected an atomic weapon—a disintegrating ray obtained by breaking up the atomic structure of water. We hoped we would never have to use it and we kept the knowledge secret. Now we find we have made little preparation. Dirka, write me an order to pump your canals dry if need be."

Without hesitation the other drew a pad from the pocket of his tunic and in crabbed Martian characters wrote the necessary permission. He handed it to Tambard with a wry face. "It may well be Mars' death warrant," he said queerly.

"Without it we face certain annihilation," Tambard pointed out. "Now"—he turned to me—"I would discuss the rest with you."

Dirka made an abrupt movement. "I shall leave you," he suggested.

"Do nothing of the sort," Tambard insisted. "What we have to say concerns you. I want this young man's help—Mars needs him badly—and a man with divided mind is of no use to anyone. He cannot leave Jansca behind since his thoughts would be on her, not on what he had to face, and he cannot take her even as his second in command unless they are mated."

"I see. So the sooner they are mated the better then," Dirka remarked. He spoke quite easily, calmly, without the slightest trace of hesitation.

BUT I think Dirka realized the need was desperate. No doubt, too, he knew his daughter well enough to rely on her judgment.

"Good," said Tambard. "We will attend to the details of that in a little moment then. Meanwhile other matters await our attention."

"Before we get to the point of making suggestions," I answered, "I'd like to have some idea of what I am to command."

"The newest, swiftest space-ship we can find for you," he said with a twinkle in his eye.

"If it narrows down to a question of speed and novelty," I remarked, "there's nothing in the known Universe to beat the *Cosmos*. Unfortunately she's a liner."

"Embodying all the latest improvements and built with a purpose," said Tambard. "As you doubtless know this is her trial trip and later she was to be put on an outer planetary schedule. She is the last word in space-ships. If you're satisfied with her, we'll commandeer her."

"Then the *Cosmos* let it be," I agreed. "Now, what surprises have we in store?"

"In the way of armament? Beyond this atomic weapon none—and even with that I should imagine you'll find it rather difficult fighting an invisible enemy."

"Not altogether invisible," I corrected. "The locators will enable us to spot them and then, of course, the ray tubes. . . ."

Tambard brought his hand down on the table with a thump.

"The *ray*, of course!" he exclaimed.

"It was that which made them visible. We can rig up projectors—no need to make them lethal—that will nullify the greatest advantage they so far possess over us."

"Can they be rigged in time?"

"Yes, in ample time. Anything more you'd like to suggest?"

"Several things," I said. "Can these projectors be rigged to give higher vibratory rate than is necessary to counteract these invisibility waves?"

"It should not be impossible," said Tambard. He made a note on a pad beside him. "What else?"

"A question of diplomacy," I said smiling. "I'll have to have a crew of Martians because Oxcta will play an important part in the campaign. I wonder if there will be any friction due to an Earthman being in command."

"No, there will be no difficulty over that, particularly since you will have a Martian mate. Your crew will all be picked men."

"Can I make one suggestion then? There's one man of the present complement I'd sooner have with me as navigator than any other. That's Hume, her present commander."

Tambard nodded. "It can be arranged," he said affably.

He rose to go. "Dirka," he said, "walk a little way with me to the door. I would discuss these young people and how best to help them in the short time at their disposal."

Together they went out, leaving us to ourselves and our troubled thoughts. I looked moodily across the table to my love. "Jansca," I said, "there is yet time if you wish to change your mind."

A look of blank horror showed in her eyes, then she got up and came round to me. "Is it," she asked with a quaver in her voice, "that you no longer love me?"

"I say it, Jansca," I said unsteadily, "however much it hurts me, because I love you now more than ever."

"That," she said softly, "is all the answer I require."

I made the only reply possible in such circumstances.

CHAPTER XIX

The Extra Passengers

OUR mating took place in the late afternoon of that same day. The ceremony was a quiet one, attended only by Dirka, Tambard himself and the two official witnesses—one of each sex—though it followed the strict Martian ritual which had not been varied by a word or phrase for centuries. We were then free to go about our own affairs until the *Cosmos* was ready for us.

The call came the next day. We loaded what little baggage we were taking into the back of the car and, with Dirka accompanying us, set out along the duralmac road to headquarters.

Tambard, Clinigo and a man I did not know were standing by the entrance to the covered gangway that led to the *Cosmos*' main deck. As they saw us the Martian chief started forward. Clinigo, I noticed, hung back.

Hume was waiting for us on the control-deck, his face a trifle paler than usual. "So it has come to this, Jack?" he murmured as we met. "Well, in a way I'm not sorry. I'll do what you want."

He stepped back as Tambard wished to speak to me.

"I've nothing much to add," the Martian said slowly. "You'll head for Gaudien first. They haven't all the necessary apparatus there but you may find a few ships ready to accompany you. Take good care of your passengers."

"Passengers?" I echoed in surprise. "This is no pleasure trip."

"So I told them," said Tambard, "but they do not agree. Clinigo—"

I interrupted him, swinging on the Venusian. "You mean you're coming with us, sir?" I said.

He nodded. "What else is left for me to do? My planet is in greater danger than either Earth or Mars. You understand"—his eyes met mine levelly—"I sail with you under your orders."

"I understand," I said, "and it is well. But the other passenger?"

Tambard motioned the other man forward. "This," he said to me, "is Arenack. Perhaps you may find a use for him."

I looked Arenack over with interest. Of course I had heard of him—who had not? A scientist of no mean attainments, I had heard his name in connection with the atomic structure.

I took a liking to Arenack from the first. His mother, born on Mars, had been the child of a Martian man and a Venusian woman. His father had been a native of Earth. An odd mixture of races, yet one that gave him a peculiar genius.

Tambard had little more to say. The Martian shook hands all round, leaving me to the last.

"Go," he said, as he bade me farewell, "go, and the good wishes of the planet go with you. Jansca, bring him back safe and sound."

"Or I do not come myself," she said with dignity. "That, you know, Tambard."

ANOTHER moment and the shore-party took its leave, and went off down the gangway.

Once out in space and heading for Gaudien, I could take things easier and hand over to Hume. The first thing I did, however, was to call Jansca down from her observation post and in her company make a complete tour of the ship, for I wished to familiarize myself with all the alterations that had been made overnight.

Arenack, however, knew all there was to be known about them and he would see that his helpers were well enough acquainted with the use of each piece of machinery to be able to give a good account of themselves.

He showed me an intricate piece of mechanism that he told me was the disintegrating ray. It consisted of a long tube with a smaller tube on top of it. The small tube was made of some iridescent substance that led down to a generating apparatus underneath the gun, for such the whole thing actually was.

The larger tube ran back to a huge box-shaped arrangement that was connected to pipes leading from the water tanks. As I understood his explanation of the process a fine stream of water was shot out from the larger tube and at the same time the ray was projected from the smaller tube.

The angles had been so calculated that ray and water jet gradually converged, meeting at a spot twenty-five yards ahead of the point of issue. The ray, acting on the stream of water, broke up its atomic structure and formed another ray of incalculable power that hurled itself with irresistible force against anything in its path. The radius beyond which the ray ceased to be effective had never actually been defined.

I talked loosely about our prospective opponents' production of a temperature of absolute zero until Arenack corrected me. The production of absolute zero, he informed me gravely, would have resulted in some sort of transmutation of metals. In other words every scrap of iron and steel that encountered the source of this temperature—or lack of it—would be turned into neutronium, an element with the astounding weight of sixty million tons to the cubic inch.

"But after all," I said, "that's only a theoretical condition. There's no such element known in the whole of the Universe."

"Isn't there?" said Arenack sharply. "If you get in the neighborhood of Sirius you'll probably learn far more about neutronium than you care to know."

I LEFT it at that. As we went out Jansca dropped a swift remark to the man that I did not catch. He nodded and smiled.

"What was it you said to Arenack," I said as we went along, "that made him of a sudden so human?"

Jansca glanced at me roguishly. "Merely making a suggestion that was after his own heart," she said. And not all the coaxing in the worlds could induce her to say more.

Messages kept coming and going all the time but no further development seemingly had taken place. Venus was still isolated from its companion-worlds as far as communication was concerned and the missing Guard-fleet had been given up as a total loss.

Jansca made a curious request of me during a lull in the messages that up till then had been streaming ceaselessly through the void.

"My dear," she said, "do you mind if I send a private code message to Tambard?"

I hesitated. "You should have no secrets from your husband," I said reprovingly.

"It is no secret," she smiled. "I have an idea that may or may not work. Until I am sure it functions I would rather say nothing about it."

"Ah, well," I said, "I suppose I'll have to let you have your way."

She sent the message herself. Within ten minutes an answer came back. She took that herself too and, judging from her smiling face, it was evidently the answer for which she wished.

"Can you tell me yet?" I asked.

She handed me the reply form on which she had scribbled the answer. It ran, *You have my permission to proceed. Tambard.*

"That," I said with chagrin, "tells me precisely nothing."

"You shall know by the time we reach Gaudien."

CHAPTER XX

Between Worlds

BUT I did not learn the details of Jansca's plan before we reached the Gaudien base. Something must have gone wrong with it for whenever I twitted her about the matter she became very glum and avoided giving me a direct answer.

The glare of the artificial suns from the base picked us up a thousand miles out. We clicked onto the directional beam and headed for the Earthward side. This, we learned on contact, was where the Guard-ship fleet was being gathered. Work there had been speeded up and I was agreeably surprised to find that half a dozen ships were ready to proceed with us. Others would follow later. Harran had not been idle either. London and New York were mustering a fleet, which was planned to make junction with us somewhere in mid-space.

The Gaudien people had fixed up a fast flyer with the latest thing in locators, put in special power communicator apparatus and sent it off into the void in the direction from which our last warning had come.

Her commander had orders not to attempt to engage in combat even though it were forced on him—but to turn tail and run away. It was his job to make contact of some sort with the invading vessels and to give the position on a general call.

In space it is difficult to plot an exact position—but the Martian officials at Gaudien had seen this and provided for it. The flyer was to accelerate to peak at progressive rates of speed and her course would be plotted hourly as her reports came in.

The moment she made contact and transmitted the news the Gaudien officials would be able to plot reliably the exact spot in the void where she had encountered the invaders.

Had I known before that such a ship was being hurled into space as a bait and possibly as a sacrifice I do not think I would have countenanced the proceeding. However, when I heard of it it was too late to do anything.

I got her angle of flight, took a copy of the chart that showed her calculated position and, seeing half a dozen supporting ships already awaiting my orders, decided to take off after her.

The third day out a faint message trickled through to us. The *M. Two* had run into a nest of the invaders. So terrific was her speed that she had shot past them before they could recover

from the surprise of her advent. Apparently they had been lounging along with their invisibility apparatus at rest but the moment they mutually located each other the enemy ships disappeared.

They immediately put up a power barrage that gradually overcame the strength of our craft's signals. I was stretching out my hand with the idea of operating the call once more when Jansca caught me by the wrist.

"You mustn't," she said fiercely. "Do you want them to get our position?"

"They'll locate us quickly enough," I said wearily.

"I think not," she said steadily.

Something in her eyes made me look at her a second time.

"Is this the secret then?" I asked.

"Part of it, lover, part of it."

"Tell me," I said quickly.

"Instead of utilizing the projectors for neutralizing rays we have turned their strength to making the *Cosmos* invisible."

"Very nice," I commented, "but if they are invisible too how much better off are we?"

"None," she said, "if they should be invisible. But they won't be. We have provided for that but I think I should prefer to keep that a secret a little longer."

"They'll surely have locators," I objected.

"Certainly. But you are forgetting our repeller rays. We are strengthening them to make the locator vibrations ineffective."

"Can it be done?" I said dubiously.

"Arenack says so. A better answer is that he has done it."

"A rather marvelous man, this Arenack," I said with a touch of bitterness.

A gong clanged in the control room, an urgent signal from Arenack that something was afoot.

"Hume," I said, "you'll have to take charge here. We're wanted in the projection room. I don't know what it is but you'd better be prepared to take orders from there."

"Is there any possibility of an engagement?" he queried anxiously.

Jansca caught me by the arm and smiled at me. Perhaps after all this was the chance for which she and Arenack had been waiting.

The scientist looked up alertly as we entered the room. He and his assistants were surrounded by all sorts of spinning and humming apparatus, machines whose very purpose was beyond me.

"We have something in sight," he snapped. "I don't know what it is but I'd suggest spacesuits be kept in readiness to don at a moment's notice."

"They're kept in readiness night and day," I told him. "What is it you've sighted?"

He pointed to an ordinary view tube connected with the ship's eye. I bent down and looked at the vision plate on which the picture was reflected. At first I thought I could see nothing but the blackness of space with the constellations gleaming brightly against it.

Then abruptly one constellation was momentarily obscured as though something opaque had passed between it and me. Had I not been on the alert for some such thing I would most certainly have missed it. Jansca was staring over my shoulder. She gave an exclamation as the opacity moved across the stars, blotted out their light, passed and merged into the obscurity of space.

"You saw it?" said Arenack. "Or rather you saw its effect. An artificial eclipse, so to speak."

"But how could that happen?" I queried. "I thought the thing—space-ship, I suppose it is—was invisible."

"Invisible, not transparent. Also you're not seeing the actual thing itself with your own two eyes. In other words you lose the stereoscopic effect."

I NODDED. There was one big objection however and I voiced it.

"It's rather risky relying on anything like that," I said. "Only sheer luck enabled us to pick up that object the way we did. Double luck, yours and mine."

"No, I picked it up with a more reliable apparatus. Come here."

He moved from his seat, motioning me to take his place. In front of where he

had been sitting, at eye level, was something like a pair of elongated binoculars. They had a hood arrangement that fitted like a mask to one's face.

Arenack leaned over me and adjusted it. Some automatic mechanism, I learned later, on the lines of the clockwork that moves telescopes in the observatories, kept it constantly on the object to be viewed.

I stared ahead, blinked and then I saw. It was a space-ship modeled on the lines of the craft Jansca and I had been instrumental in destroying not so long before. Only it did not seem so large.

"You saw it then?" said Arenack at my gasp of surprise. "One moment, please."

He made some minor adjustments. The space-ship seemed to leap toward me; its walls shimmered and vanished, and it was as though I were looking through glass into its interior. Everything, however, was on a reduced scale, and I could see nothing with any clearness of detail. Machinery, men—pigmy figures—dressed oddly. That was about all I could make out.

I slipped the hood from my face. "That's it then, is it?" I said with amazement at the miracle I had witnessed.

"It's too far away yet for us to see details, of course," Arenack said, "but you see we've a means to overcome their invisibility."

"But how?" I queried.

"The—" He said something that sounded like "dalifon"—but before I could ask him what that meant Jansca interposed.

"What you call the Crystal Eye," she explained. "We may be able to make further improvements."

"If we have the time and opportunity," Arenak said softly. "That fellow is cutting across our line now but at any moment he may change direction and veer toward us. Perhaps they have some mechanism for detecting our presence, even though we happen to be invisible."

I realized that. But I fancied I saw one defect in the apparatus of detection.

"This is good," I said, "excellent in fact, but does it not mean that you must keep someone with eyes constantly glued to the peep-holes here?"

Smilingly Arenack shook his head. "Not necessary," he told me. He gestured toward a white plaque on the wall in a direct line with the Crystal Eye. He touched a button on the desk beside him and as I watched the milky surface of the plaque changed. It went black—the stars came out on it and the tiny silver ship showed up quite clearly.

As we stared its appearance changed. From a cigar shape it altered to a disk, then abruptly with a great leap the disk increased in size. Arenack exclaimed. Jansca caught at my arm.

"It's changed direction," she cried. "It's coming toward us now and it's moving at a terrific rate."

"Do you think they've managed to locate us somehow?" I asked Arenack quickly.

"Impossible to say," he answered. "Try altering our course."

I got Hume on the open communicator, "Three points west of our present direction," I told him. "Hold her there for fifteen minutes."

Again we turned our eyes toward the plaque. The angle of the space-ship seemed to have altered slightly. It was no longer a disk, rather an ellipse. But even as we watched with bated breath, it slowly swung back again into its former position.

There was no doubt of it now. She was aware of our presence in space.

"Action stations," I ordered. "Space-suit rig and Oxcta solution for every man."

CHAPTER XXI

At Grips

OUR own space-suits were kept in readiness in the projecting room and beside them a ready solution of Oxcta put up in tiny phials. We broke ours, drank the highly concentrated contents

and proceeded to don the suits.

On the belt of each suit hung a reaction pistol, a thing with a vast mouth like an old blunderbuss. Should the worst occur, the ship be destroyed and ourselves projected into the void, we possessed at least a fighting chance for life.

The reaction pistols furnished a means of propulsion through space. A man might live in such a suit, moving about in free space, for a matter of two or three days. The suits had originally been designed to preserve the lives of passengers wrecked in space. No one had ever thought of the possibility of their being used to save survivors from a ship stricken in war far off the beaten track, for war we fancied had long been banished from the planets.

The remaining ships of the fleet were a couple of thousand miles to the rear and so safe for the time being. Their locators would no doubt have warned them of our altered course and in due time the same means would give them notice of the presence of a stranger ship.

But since we had been discovered I did not think it wise to communicate with them. Their rate of progress would soon bring them close enough to distinguish the stranger, as she would become visible as soon as our neutralizing rays played on her.

I swung over the little lever that set the power going. For a space nothing happened. Then suddenly against the background of the void there leaped to life a lovely golden shape, the spaceship sheering around to veer in at us.

It looked as though her intentions were purely exploratory. An idea struck me. It was not altogether impossible that they might have mistaken us for one of their own craft.

I was just about to put the idea to test when a call came through from the transmitting room. It was the duty operator speaking.

"A series of strange signals coming through for some minutes," he informed me.

"How's the recorder transcribing them?" I asked.

"As a series of impulses," the operator told me. "They're coming over with irregular frequency and the recorder is putting them down as lines and dots. If it wasn't that it's never been used nowadays I'd think it was someone trying to transmit in archaic Morse code."

"Morse?" I ejaculated. "Do you happen to know anything about *that?*"

The operator chuckled. "Not much. But enough to say that this isn't Morse. Here, sir, something's coming through again. I've got a group combination that came several times before. It looks like a *message begins* sign. It's clattering."

"Throw your communicator open so I can hear what's going on," I commanded.

The screen immediately lit up, showing me the interior of the transmitting room and the sounds of the instruments working came plainly to my ears.

I listened to the clack of the machine as it worked. It was going at a fearful rate, a sort of urgent *click-click-click,* then a long *click* and so on. Something in the pace at which the signals came over made me think that the operator at the other end was fast losing patience.

"Now he's getting angry," I commented.

THE clicks came with a sharp rattle, a perfect hailstorm of them. There was a pause, possibly while the operator waited for a reply. Then when none came our machine began to clatter again over an octave and ended on a final note that expanded into one sharp explosion. Anger, irritation, finally utter disgust.

Though I waited a full minute nothing more came through.

"Good," I said to the operator, "you can cut out the general circuit now. But keep those records. We may try our hands at deciphering them."

I cut out and spoke to Jansca. "How's that stranger ship been behaving while I've been at the communicator?" I asked her.

"Maintaining distance," she said. I

told her something of what I had seen and heard.

"Ah," she said, "doubtful of us then. Perhaps that's a good sign. I wonder what Arenack thinks of it."

"Thinks of what?" he said, looking up from his work on the projector.

I told him.

"That's it then," he said. "They're trying to speak us and have lost patience because we haven't answered. That means they don't know our ships have discovered an invisibility process. When they find out . . ." He finished the sentence with a soft whistle.

I looked toward the plaque where he had pointed. The golden shape was moving again. The distance between us was lessening rapidly.

"It's coming," said Arenack, stretching his hands toward the nearest tube.

"No—not yet!" I cried. "The ray projector. You've taken the kick out of it and are merely using its vibratory scale?"

"I'm not," he said calmly. "What I'm doing is using a wave with a lesser number of vibrations. If I quicken up the vibrations I can send the ray over again."

I nodded. "I don't want to destroy that craft utterly. But something has to be done. Heat him up a bit, will you?"

"I'll try. Stand aside, all of you. There may be a flashback when I change over."

Over the flexible metal fingers that covered his own flesh and blood ones he drew thick yet pliable rubber gloves, flung a glance at the plaque before him, adjusted a vernier scale screw on the edge of the tube and pulled a lever. We watched the growing bulk of the spaceship as it showed in the plaque. For a minute or so nothing happened. Then the golden shape seemed to dull a little. It shone out again, gleaming rather brighter than before.

A little later it began to glow. From gold it passed to a deeper orange and gradually a faint tinge of red crept over it.

"Better hold it at that, Arenack," I said warningly. "You've got the outer shell red hot. I don't want to roast them. I'd rather get them to surrender if I can."

"I'll notch it a shade higher," he said. "That heat will radiate off quickly into space. Unless, of course," he added, "they've got something to counteract."

I didn't think they had. I could have sworn we had them helpless, we held them so long. I was even beginning to think there was a chance of capturing the ship intact when the thing itself happened.

The red-hot shell of a sudden began to lose its color. It wavered fitfully back to orange but somehow Arenack managed to hold it at that, though I saw out of the corner of my eye that he had to apply an extra notch or so to do it. One force, it seemed, was struggling against the other, neither strong enough to win. They were locking in neutral.

I have never made a bigger mistake.

Of a sudden the orange dimmed down. I don't quite know what happened next. To this day I am not quite sure. Jansca, however—perhaps fancifully—says it looked as though someone had rolled up the edges of space and hurled it like a ball into nothingness between us.

BUT what I do know was what happened in the projection room. There came a vivid sheet of blue light. The room seemed to grow chokingly cold as though one were breathing—or trying to breathe—liquid air. I can give no better description of it than that. Arenack made an abrupt movement and a startled oath fell from his lips. With his gloved hand he dragged over the lever that cut off the power.

The air of the room cleared on the instant. The blue light vanished and I became aware of Arenack crouching over the machine as though he had been struck and thrown there. I caught him by the shoulder and at my touch he slipped to his knees.

"Jansca," I called and between the two of us we raised him to his feet. His assistants came to our aid. He opened his eyes, blinked, pushed the visor of his helmet farther back from his face.

"I'm all right now," he said. "That

was a near thing, though. If I hadn't cut off power when I did . . . I thought for the moment we were gone."

"So did I," I said grimly. "Have you any idea what happened?"

"A glimmer," he said. "They've got something to beat our heat ray—some sort of repelling force. But the nerve of it! They used our ray as a path for it, hurled it back on itself and into the machine. If I hadn't been wearing insulating gloves I wouldn't have been able to pull the lever over and if I hadn't pulled the lever over—the stars confound them!—we'd have gone out in a blue flare."

Arenack jerked himself to his feet. "Can't afford to take our senses off the job for a moment," he said warningly. "That craft's notched the first score. Thinking he's taught us a lesson he may try to push it home. If he has any more samples of that sort we'll be lucky to get out of it with our lives."

"If it's a case of lives ours mustn't be lost," Jansca declared. "If we go the barriers are down and there'll be none to hold them." She turned to Arenack. "That's your work, my friend," she said steadily. "Keep us alive no matter who is destroyed. The *Cosmos* must come through."

"I'll do my best, Jansca," he said. "If the chief gives me a free hand I'll clean up the void."

"You can have that free hand," I said. "Ah, he's swinging again."

The gleaming space-ship had indeed swung around. It was rising at an angle too. I caught a glimpse of the underside of the ship and at once the meaning of the maneuver came to me.

"He's trying to get above us," I cried. "We mustn't let that happen."

I sprang to the control communicator, and snapped quick orders. We could hardly rise on the course we were taking. The only thing left to do with any hope of success was to make the nearest thing possible to a right-angle turn and rise from that.

The abrupt veering of the ship threw us off balance and flung us against each other, the contact of our space-suits filling the room with clatter.

The instant we recovered ourselves I swung my eyes to the plaque on the wall. We seemed to be now at much the same altitude, circling like two hawks, each watching the chance to strike.

Then abruptly the stranger veered. A dazzling white glow flickered about her nose and I waited for what terrible thing I knew not. But nothing happened to us. Why, I saw in the very next instant.

One of our half dozen supporting ships must have blundered somehow into our orbit and been located by the stranger. The white glow flickered about her nose. It spread, taking on her outlines. Then the ship dissolved into a myriad of fragments that went floating and drifting away.

"The atomic gun, Arenack," I said grimly.

I do not think the stranger ship's people could have known what struck them. One instant they were there, the next they had been exploded into ultimate nothingness.

CHAPTER XXII

The Vandals of the Void

MY next act was to call the transmission room to get in touch with the fleet and presently the heartening news came back that only the ship we had seen destroyed had met with disaster.

From now on, however, it behooved us to go warily. The most irritating feature of our two encounters was their utter conclusiveness. Because of that we were no nearer to learning the things we wished to know.

After the strenuous time of the last hour or so we were all more or less exhausted—so I sent Arenack off to rest and told Jansca I thought she had better turn in.

She asked me what I intended doing and when she found I meant to relieve

Hume at control she said, "I think it's you who need a rest more than any of us."

"Don't be foolish, Jansca," I said wearily for I had no mind to argue. "Actually I've done no more than stand by and watch while you and Arenack and his assistants did the work."

"Yours was the harder part then," she said. "We had our work to keep us occupied. You, with your responsibilities—"

"Enough," I said sharply. "Jansca, you've just reminded me that I'm in command. Carry out orders, please."

She made a wry face but she went.

I took over from Hume. Though he said nothing I thought from the look of him that he was glad to be relieved. He had got the *Cosmos* back on her original course, so I gave the control into the hands of the Martian second officer with orders to hold her and turned to the work of plotting our further direction.

The chart on which our evolutions had been automatically recorded was a mass of amazingly intricate geometrical figures, the mere sight of which set my brain in a whirl, but the work had to be done and I set to it at once.

All the same it was some time before I managed to orient myself. Then with the planet chart in front of me I ruled the course I wished to take, plotted the figures and gave the altered direction to the Martian Second.

"That will take us direct to Venus," he said. "You're heading for Shangun?"

"I'm asking the company to take no risks that I don't take myself," I said steadily for I understood only too well what was passing through his mind. "If we have to make a sacrifice of ourselves it can't be helped."

"I know that," he said. He turned to put my instructions into operation but he left me thoughtful.

Clinigo came in a moment later, an angry little man. He had been resting when the trouble began and had awakened to find himself virtually a prisoner in his own part of the ship, one where I believed he was least likely to come to harm.

He stood and eyed me for a moment, his whole body quivering.

"It was you," he said with an odd harsh note in his voice, "who ordered that I be kept to the rear of the ship?" And when I nodded, "Why was that?"

"Because," I said steadily, "you were in what was the safest place. Even if we were blown up you would have had a fighting chance in your space-suit."

"By what right did you give such an order?" he said bluntly.

"The right I acquired when you and Tambard sent me on this expedition. You may remember you came as a passenger."

He smiled at that, the first faint flicker of a smile I had seen on his face that day. "Do you think that for one moment I question the authority delegated to you? I deprecate the policy that considers my life of such value that special precautions should be taken to preserve it."

HE looked then at the space-chart with the red line of our intended course pointing like a lance at the heart of Venus.-"Man!" he said with a note of incredulity in his voice. "Are you actually making for Venus?"

"Yes," I informed him. "Why not?"

"But it's cut off from the rest of the worlds. The entire planet may be in the hands of these vandals of the void," he pointed out.

"The more reason for going there," I assured him. "The sooner we tear the veil away the better."

He looked doubtful. "I suppose you know best," he said at length. "We're in your hands now. You've pulled us through one encounter successfully, so you may do so to the end."

"That's rather optimistic," I smiled. "You heard what happened? It was science that won the victory, not generalship."

"So I believe. What's your acceleration?"

"I'm increasing velocity up to peak," I told him.

We were already far out in space, far beyond the farthest point our scouting ships had penetrated when they

were silenced, perhaps forever, by the strange space-craft.

ONCE again, with Venus far closer, our locators warned us of alien bodies and I ordered "action stations" at once. The stranger was coming right for us. He was not traveling invisibly. He was still too far off for us to see him yet save as a silver streak, moving athwart the blackness of space. But even in that view I sensed a certain familiarity.

"Operator," I called through the transmission communicator, "stand by to transmit."

I heard his startled gasp, gave him a plain call in the international code.

"Leave the general communicator open," I said when he took it. "I want to see and hear what transpires."

He did so. Back in a very few seconds came a startled, "Who the planets are you? Where are you anyway?"

"Give them our call signal," I told the operator. "Not our name. Get his name however."

It was slow work, this questioning and answering in the code. It always is.

"Got yours," came the answer. *M. Ten* here. But where are you?"

"Throw off the vibrations," I said over my shoulder to Jansca. "It won't hurt to be visible for a while now."

I could imagine their vision man on the *M. Ten* blinking as we suddenly appeared out of nothingness, perhaps gasping with amazement at the apparent miracle of it. But they wasted no time once they were sure of us.

"We've escaped," ran their next message. "But we think we're being pursued."

"Tell them to link up and send a man across," I said to the operator. "Their commander if he can rely on anyone in his absence. Get action. We haven't time to spare."

"Coming across at once," I read on the screen two seconds later. "Stand by to connect."

It was ticklish business, making that connection but it was done in record time. I went down to the port myself to meet the commander. Everything went like clockwork. We closed our port, disconnected, and *M. Ten* sped off, heading for the Gaudien base and Mars beyond. The moment she began to move our vibratory apparatus was put to work and we vanished once more.

"Now," I said to the commander of the *M. Ten*, Balena by name, "come to the projection room with me and you can tell your tale there while we watch. I have an idea our time will be short."

"Why are you making for Venus?" he asked curiously.

"Because," I said, "we want to go there. But let us make the projection room. There are others who may wish to hear your story and to whom the knowledge of what you've discovered may be helpful."

I ushered him to the room and made him known to Jansca, Clinigo and Arenack. He saluted them, then turned to me as his conductor.

"Now," I said. "What has happened to Venus? Why has the planet been cut out of communication?"

"Because they've got one if not more bases there," he answered, "and it's only a matter of time—short at that—till they subjugate the whole planet. Then they'll turn their attention to our worlds."

"You think there is no hope?" said Clinigo brokenly.

The other hesitated. "For Venus?" he asked. Clinigo nodded.

"I'm sorry," said the other, "but I don't see how there can be."

Clinigo turned away. He seemed to be studying the growing image of Venus reflected on the wall but I think in reality he had turned to hide his tears. I caught the words, "My poor planet."

He came around suddenly, another Clinigo from the one I had got to know.

"Will you please tell us," he said in a voice from which all emotion had been wrung, "as completely as possible everything of importance that has occurred to you since we lost touch with you?"

Clinigo had forgotten that he was a passenger and remembered only that he was one of The Three.

CHAPTER XXIII

The Evening Star

IN precise dry formal tones Balena told his story. When the fleet sent out from Gaudien had been attacked by the invisible force, the *M. Ten* had been saved by the fact that, due to the necessity of repairing a temporary defect in her propulsive machinery, she had lagged behind.

Her observers had witnessed the disposal, practically *en masse*, of the whole Martian fleet. Realizing that there was nothing to be gained by lingering near the scene of the disaster, the *M. Ten* turned tail, transmitting to Gaudien as she went.

Something had gone wrong with the locators and they had no means of knowing whether the foe was following or not. The receiver apparatus was damaged and failed to function.

In the midst of transmitting the whole of the ship's company began to feel a paralyzing cold creeping over them and one by one they dropped at their posts.

"Why wasn't Oxcta served out to the men?" I broke in to ask. "That would have saved you all."

But it seemed that when the fleet was being fitted out at Gaudien Oxcta supplies ran short. The bulk of it was concentrated on the flagship. But even then, Balena stated, Oxcta hadn't helped. Oxcta might neutralize the paralyzing cold but it had no effect where the other weapons of the strangers were concerned.

They came back to consciousness to find themselves prisoners and their ship in charge of strange beings, taller even than the Martians, whose most distinctive features were their deep purple eyes and the ridge of horn on each man's head. They spoke a marvelously simple language for Balena himself managed to pick it up under instruction in five days.

My original guess, or rather Parey's information, had been correct. The strangers came from the planet Mercury and were part of an expedition, partly exploratory and partly predatory, sent out with the view of finding a more congenial home somewhere among the other habitable planets.

They seemed of a rather high order of intelligence, ruthless in their ways, yet their civilization had moved along lines different from ours. Apparently they had made a number of discoveries we knew nothing about while in many ways we had the advantage of them.

However—they had established a base on Venus in one of the uninhabited districts and there they had gradually accumulated a space navy. Venus, it seemed, suited them as a base but they wanted a world not so cloudy as a place of permanent settlement.

Apparently they would have been content to keep their presence on Venus a strict secret had they not somehow discovered that Venus was one of the constituent bodies in the confederation of three worlds.

How they made this discovery is not quite clear, nor is it clear what they hoped to gain by holding up and examining the ships of the interstellar traffic. Once they discovered the worlds were beginning to wake up to the menace they embodied, the Mercurians threw a communication barrage around Venus and set to work to trawl space.

Balena and his men identified the place to which they were taken as being somewhere on the Southern edge of the Venusian tropics, one of the wastelands of that planet. The heat, from the Martians' point of view, was very trying. It gave Balena an idea which gradually he communicated to the crew.

They began dropping one by one as though overcome by the excessive humidity. The Mercurians became really alarmed. They took Balena aside and their leader questioned him closely as to the cause of this condition and any possible method of alleviating it. Balena after some hesitation admitted that they had a preparation on his own

space-ship that would help to counteract the trouble.

THE Mercurians sent for it. It was a semi-liquid preparation, bromine, used extensively to form bromides and bromates and as such the two cylinders containing it were labeled in Martian characters. Some of the Mercurians, who had made good progress in Tlananian from the various textbooks they had taken from space-liners they had raided, were able to read the labels and satisfy themselves that the stuff was quite innocuous from their point of view.

Bromine, however, was an entirely new substance to them and naturally they were unaware that in its raw state it is capable, if liberated in sufficient quantities, of causing considerable distress, probably pneumonia, possibly death to any who comes in contact without taking reasonable precautions.

Balena, instead of releasing the bromine by means of the graduated scale on the tap of the cylinder, turned it suddenly full on with the nozzle pointed toward the Mercurian group, who were standing idly watching them.

The Mercurians staggered, gulped and were seized with paroxysms of coughing that rendered them absolutely helpless. At the first sign that the stuff was taking effect the Martians began to run back to their space-ship. Balena threw the hissing cylinder into the midst of the squirming Mercurians, releasing the pressure in the second cylinder and threw it after its mate.

They reached the space-ship, piled inside, closed the door and started to ascend just as the first of the Mercurians came running after them and began to shoot with their rays. It would have gone hard with the Martians, no doubt, had they had to contend with a guard on the ship. But although one was kept over it during the night, none was considered necessary in the day.

Even as it was, however, the first flash of one of the ray tubes came danderously close to *M. Ten.* Also, for some unaccountable reason, the engines refused to function properly. But by frantic manipulation of the screens Balena and his men prevented the worst from happening. "And then, of course, your locators picked us up," I said as he ended. "Well done, Balena, I'll see you're recommended for this."

"If I might ask, sir," he said, "just what are you proposing to do?"

"We're running for Venus," I told him. "Rather hard lines on you since you've just managed to escape from there. But duty is duty."

"I wasn't thinking of that aspect of it altogether," he said with a wry face. "But they must have lifted the barrage temporarily at any rate. Not so long after we got into free space we heard signals, not from any of our ships. I think they must have been recalling their fleet."

There was one other possibility that struck me, though now was not the time to make it public. It was quite as likely that the Mercurians, besides signaling their ships back to the Venusian base, had also sent out a call for help to their own planet.

I got Balena to give us the location of the base and altered our course to strike Venus in the tropics. I had in mind the desperate throw of striking at the heart of their power-plant in the hope of putting it out of action before a fleet that hopelessly outnumbered us swept down to wipe us out of existence.

All that day the ether was thick with strange signals in a code none of us knew. Even Balena, with the knowledge he had acquired of the Mercurian language, was unable to decipher them for us.

The one thing we could do was to locate their point of origin, and on that I kept the assistant operators working overtime. Some of the signals were streaming in from Venus and presently we began to catch other signals in the interplanetary code. The Mercurians had had to lift the barrage to send their own messages through and the Venusian authorities were trying frantically to get in touch with the rest of the Universe.

All the while the blue disk of Venus

grew and grew, became silver, filled out and out until it covered almost the entire vision surface of the white plaque in the projection room.

As the planet swung nearer Clinigo became more restless than ever. That calm which should have characterized one of The Three utterly deserted him.

When we were a hundred and fifty thousand miles above the planet I called a halt. The time had come to drop down through the floor of cloud into the atmospheric envelope.

I called Jansca to my side. "Dear," I said, "keep with me. It is only right to let you know that we may never live to see another dawn."

Her face paled. I think for the first time she visioned the possibility of our being disrupted into our original atoms as one breaks up a mound of dust with a jet from a hose. But worse than the fear of dissolution in that fashion was the dread of parting. She came a little closer, caught me by both arms—we were alone for the moment in the room—and drew me to her.

"If I have to die I shall at least die like one of Sonjhon blood," she said tremulously. "But even in death I would not be parted from you."

I caught her to my heart and kissed her dear lips, then gently thrust her from me.

My finger wavered over a button on the button-studded plate before me, then with a sudden resolution I pressed it. I had given the signal that was to send us dropping through the floor of cloud to whatever fate awaited us below.

CHAPTER XXIV

Armageddon of the Void

SLOWLY the cloud murk parted, slowly the mist lifted and the land below stood plainly revealed in the light of the hot-house day. A land of strange things, strange colors and strange plants—Venus, the planet I had planned to reach as the last point of my pleasure trip.

We were flying invisible, keeping level by rapid and tricky manipulation of our gravity-plates—some call them screens—for I dared not use the engines. In atmosphere they make a drone that carries a surprising distance.

Balena touched my arm. "That," he said, "should be the place but I can't see any lights, any reflections of any sort."

"I shouldn't think we could," I told him. "Probably they've masked the camp now. They mightn't even care to run the risk of a Venusian coastwise craft sighting them. They want to work undisturbed until their armada arrives. However, we've the means to uncover them.

"Arenack"—I turned to him—"any results yet?"

He was trying to focus on the instrument I have called the Crystal Eye and was finding it difficult, perhaps because of some subtle difference in the atmosphere of Venus. But as I addressed him he jerked his finger back over his shoulder, gave an exclamation and went on twisting screws.

I glanced at the plaque towards which he had pointed. Something misty showed where a moment before had been nothingness. I fancied I saw buildings. I looked again and was sure.

Then abruptly, as Arenack hit the right vibration in the scale, the scene sprang into light and became plain. I saw buildings—I saw men, the odd figures of the Mercurians—and, rising gigantic over men and buildings both, a mast of some sort that was a spiderweb of metal traceries. At the very apex something that I would have called a mirror had it not been egg-shaped, wobbled and spun, throwing gleams of light from it as it moved. That it was a power-station of some sort I had no doubt.

I think they must have had some device that warned them of our presence, invisible though we were, for I saw some of the figures abruptly look skywards,

and I could almost swear—to such a pitch was my imagination keyed—that I heard them cry out. One look from each of them, the abrupt white patch of an upturned face, then the figures disappeared inside the building and the egg-shaped mirror on the mast began to wobble more furiously than ever.

"Arenack, let them have the heat-ray and stand by for the atomic jet for use at a moment's notice," I ordered.

The words had hardly left my mouth before the long yellow ray jetted from our bow projector. Some of the buildings glowed in outline for an instant, then collapsed into their own ashes. But that infernal mirror still wobbled. The mast itself seemed intact and even as I looked a pale blue light glowed in its center, then suddenly shot out towards us.

Remembering our invisibility I think they must have aimed at random, for no doubt their locators had been destroyed by our heat ray. Nevertheless they shot amazingly straight.

The *Cosmos* staggered, buffeted by a force titanic beyond all conception, and for an instant I thought she was going to keel over.

Then I saw through our vision plate one of our supporting ships glowing like a blue sun. The vision lasted no longer than one would take to count five. The ship seemed to lose shape, passed into a molton stream, a metallic rain that dropped upon the humid soil beneath.

"Give them the atomic gun, Arenack," I snarled.

A HISSING sound as the water leaped out, a trembling as the disintegrating vibrations rushed to join it in mid-air, then a rushing stream of fury like the dust molecules in a beam of sunlight.

The kick of the explosion flung us back, and when we looked again there was no longer any mast or mirror or anything that we could identify, only a scorched and disrupted wilderness, torn, scarred and ripped open by the heel of the atomic jet.

At the cost of one of our ships we had destroyed the one known base but now the question arose—were there any others of which we had not known?

Since we could not scour a planet ourselves I decided the best thing to do was to head for Shangun and warn the authorities of what to expect. I gathered that they might not be altogether defenseless and since I wished to run no unnecessary risks I decided after talking the matter over with Clinigo and Jansca that we had better start transmitting so they would know we were coming.

After being so long isolated from the rest of the Universe Shangun went mad when the communication was restored and the infection no doubt spread right round the planet. They could not but believe that the menace had been removed forever. Even the guarded warnings that came through did little to dampen their wild enthusiasm.

In extenuation it must be remembered that though their planet was the only one so far invaded none of the Venusians had had any encounters with the Mercurians. They possessed no first-hand knowledge of the powers wielded by the aggressors. And the only base so far located had been established at a point remote from civilization.

Indeed, until the advent of the *Cosmos* the Venusians themselves did not know such a base existed.

Yet when we began transmitting, telling in detail the story of our efforts and how they had culminated, even that was taken as proof that we had conquered finally.

Otherwise, they reasoned, how was it that we were sailing calmly towards the capital of the confederation, victorious and unharmed?

Shangun, a city of soft twilight tones, of lights subdued and eye-entrancing after the glare of the Martian redlands, had for once outdone itself. It was alive with lights and flags. It was shouting joyously the incarnate voice of a planet snatched from worse than death.

The very loveliness of it, the wild abandon of its people, cut me to the quick. How could we convince them that

this was no conclusive victory, merely a skirmish by the way, with the red, riper scenes of carnage yet to come?

Clinigo was our last hope. If he could not bring his people to a realization of what still lay ahead of them no one could. But as I looked at his face I seemed to read there and in his eyes doubt of his own ability to do any such thing.

A troubled man was Clinigo that day, torn between love of his planet and anger at the folly of the people. A pleasant birdlike people, sweet and charming to know, but broken reeds on which to lean in a crisis.

We dropped the *Cosmos* until she floated a hundred feet above the ground and let her drift gently to the landing slips. I would not let them close the grips over her hull, however, for I had an ugly foreboding that the worst had still to come and we might yet have to rise at a moment's notice.

Clinigo descended, leaving the rest of us in the ship. We refused all invitations to land, although the Venusians clustered round the departure platforms—they could not come nearer for I would not have any gangways run out—and cheered us, called to us, chattered, laughed, threw us flowers and congratulations.

It was as if Fate had thrown the gage and taken up the challenge without delay. While Clinigo was still wrangling with the local authorities, trying to convince them of the danger hanging over them and finding it no easy task—while the laughing, loving people about us were singing their delight of our presence—things were going on which were presently to become manifest.

The first intimation came in startling fashion. We had been transmitting—to where I am not sure—and the televox machines on the landing stage were shouting some news of the hour when all of a sudden everything went still and dead. All communication stopped in mid-note as though temporarily paralyzed. Alarmed, we swung our eyes skywards.

For a time we could see nothing save our four remaining colleagues maneuvering against the ceiling of cloud. Then—as though someone had ripped the sky open with a bright steel blade—the cloud rack parted and through the opening, one by one, brazenly disdaining concealment, came the eighty ships or so of the Mercurian armada. They had been closer than we thought.

Glistening golden shapes, the smallest of the size of the *Cosmos*, they slowly settled down, secure in their own overwhelming power. Had we remained inactive it is hard to say what might or might not have happened—but as always nervousness precipitated the conflict.

ONE of our four ships, the closest to the descending host, suddenly whirled, flashing its heat-ray as it moved. The ray landed on the nose of the foremost space-ship. There came a red glow, and almost instantly an explosion set the air rocking. Perhaps the Mercurian was carrying explosive material. At any rate for the second time our puny heat ray, almost by accident it seemed, was the spark to touch off the powder and blow the ship to fragments.

It touched off more than that with a vengeance! The air-blast that set the fleet rocking had hardly died away—the fragments of the broken craft were still falling even when its fellows, like hawks suddenly disturbed, wheeled and almost in the twinkling of an eye had formed a circle in the center of which floated our supporting guard-ships.

One moment we were dazzled by that whirling circle of gold. The next the whole visible round of the cloud-wrapped sky had turned that unearthly electric blue—and the very heavens seemed to be raining molten metal on us.

The instant the first blue ray leaped I had swung over the levers that sealed our hull. Almost in the same motion I pushed the button that rang the control room to activity. We rose so quickly that we were nearly swung off our feet and Jansca was thrown against me heavily. I caught her from plunging to the floor.

I have often wondered since if that action was the means of our salvation. The roof above us seemed to split asunder, a searing blue ray passed so close to us that we could feel the thrill and shock of it and then somehow we seemed to be tipped out into free air, and to be dropping, dropping. Jansca I still held close to me and it was that that saved her life, I really believe.

Coming out of the void we had laid aside our space-suits, but I had donned instead my service uniform—put it down to that same uneasy feeling that would not permit the *Cosmos* to be moored fast. Tucked in a roll at the back of the collar was the tiny light, yet strong parachute every Guard wears as a matter of course when maneuvering in the air. Its weight does not incommode one, for it weighs little more than a silk pocket handkerchief. But it is built of a material that will take the strain of a normal man without ripping.

As we dropped I felt the tug about my waist as the light cords tightened, and we floated instead of falling. We landed in a tumbled heap, the breath shaken out of our bodies, and for a space we did not move. At last I struggled to my feet, found my knife in its sheath and cut the cords away. Jansca lay very still on the ground and a wild fear that she was dead seized me.

But she moved, took a deep breath, and, "Thank God, you're safe!" she gasped.

"But you—are you hurt?"

She shook her head. "Only the breath knocked out of me. But what happened?"

I could not say. I could only look about me. The *Cosmos* lay some distance away from us, all that was left of her. Her rear half had been fused so that it must have run like molten butter—her forward part pitched down nose first and now lay half buried in the soft soil. Fumes and smoke rose from her.

We had fallen some distance outside the city but our fall had been marked and people came running to our assistance. With their help we searched, sick at heart, knowing from the beginning that we would find no living soul amongst the wreckage.

By some unaccountable working of the law of chance we had been standing in the one spot in the ship that spelt safety. A foot one way and the ray would have fused us, a foot the other and we would have been tumbled into the shattered forward part and incinerated with the others.

As it was, when the two halves separated, we were tumbled out into the air in the same way that a housewife will crack an egg-shell and tumble its contents into the pan. What miracle, what blind working of fate it was that threw us clear of the blazing forward end I cannot say even to this day.

Sick and weary, we stood and looked at each other, our faces wan and ghastly in the light of destruction. High above us the golden fleet of the Mercurian invaders still wheeled and dipped, but now the blue rays were sweeping over Shangun and that city of wonder and beauty was dissolving like ice in the sunlight.

Soon, if this went on, there would be nowhere in the whole round of the planet where a man could lie with his roof above his head and know the night would bring him rest and peace, the dawn the pleasures of a new day.

CHAPTER XXV

Ad Astra

THE little group of people—ourselves and the Venusians who had run to our aid—remained staring like men frozen. The stupendous malignity of it all had temporarily paralyzed us, and left us without power of speech or movement. We could only stand gazing in awe-struck horror, eyes round with apprehension, at each other's blue-lit faces and the scene of stormy devastation beyond.

How long we stood thus I cannot say.

It was probably no more than a matter of seconds, though it seemed ages. The ruin of the *Cosmos* close by us was still blowing and the vegetation it had crushed in its fall smoked fitfully. A red-hot girder from the shell rested across the trunk of one of those enormous tree ferns that are such a prominent feature of the Venusian landscape.

The soggy mass of the bole resisted for a time the passage of the girder as the bursts of steam eloquently witnessed. But presently the heat of the metal forced it through the trunk and it fell with a clang on another girder, already prone on the ground.

The clatter roused me. It seemed too to have released the shackles from the others. A babble of voices came to me. Most of what was said, being in Venusian, was unintelligible, but presently I found a man who could speak Earth English—he had made one or two trips to our planet—and through him I was able to communicate.

The salvation of the little group was for the moment the thought uppermost in my mind. Cosmic destinies could wait until later. For a time we were out of the arena and in the meanwhile it remained to be seen how we could best keep life in us.

How extensive the damage done in Shangun was we could not say but Jansca and I and our Venusian friend—Gallivog, he said his name was—all agreed that we would only diminish our chances by making for there. The populous centers were almost certain to be dealt with first by the Mercurians.

But back of the city was a fern jungle with trees as thick as six earth feet and in its depths we might find food and shelter of a sort. I learnt from our guide that vegetable life was prolific on the planet and only the constant vigilance of the Venusians kept it from inundating their towns and cities.

Well, there was nothing for it but to take refuge in the jungle and trust to the fates to find a way out for us. The Venusians themselves were more or less at home here but Jansca and I found the climate terribly trying.

She was used to the dry air and the warm plains of Mars and this dank dripping heat sapped her vitality to an incredible extent. Fortunately we each carried our own private supply of Oxcta else I don't think we would have lived.

Most of the vegetable growths were edible and we did not want for water but what we missed most was flesh meats. True, most of the pools and lakes we came across were swarming with fish but they were of a kind alien to us. The Venusians seemed to relish them but somehow we could never adjust our palates to them.

The days crawled by. We managed to build a shelter of sorts in the jungle and once that was erected Jansca showed signs of improvement, though she never quite became her old self. And all the time, day and night, the Mercurian fliers passed to and fro overhead, the sky dripping with the light of that blue ray of theirs.

From the moment we first decided what we were to do I had put the little group under discipline. Jansca, Gallivog and I had organized the camp and apportioned to each one the work he or she must do. I think it was partly due to this strictness of mine and partly to the way we camouflaged the camp that we were left so long undisturbed. One day Gallivog went on a scouting expedition to Shangun.

When he returned he reported that many of the buildings were still intact but the Mercurians had landed and were beginning to occupy the place. Such Venusians as remained in the city and escaped with their lives were being mustered and put to slave tasks.

His report, however, gave me an idea. I did not think it likely that the invaders had yet found it possible to conduct a house-to-house search, and acting on that assumption I believed there might be weapons or food or other useful articles there that we would do well to acquire.

I would have gone myself but I knew nothing of the layout of the city. Gallivog and a couple of his friends, however, volunteered for the job as soon

as I mentioned the matter to them.

I was glad afterwards that I did. They brought back quite a number of useful articles, ray tubes and charges for them, compressed foods and tinned liquids that could be warmed up mechanically. Gallivog, in a moment of acquisitiveness, had taken possession of a portable communicator set.

On the face of it that was least useful. It had only a local range. Its impulses would not penetrate beyond the planet's atmospheric envelope and even if they would we dare not take the risk of broadcasting signals through space. The Mercurians would certainly locate their source and through them us.

For some days we had seen nothing of the Mercurian ships, though we knew parties had landed and were even now in Shangun. The ships themselves, I had no doubt, had drawn off to a base somewhere on the planet and were probably refitting. I was beginning to wonder just how much longer we could hold out before sickness and, sooner or later, the lack of proper food and comfort began to thin out our little party when the thing itself happened.

A THIN thread of a whisper brought me out of my sleep, a voice close to my ear. For the moment I thought it was Jansca speaking to me, the next instant I changed my mind. It was her voice without a doubt but it was not me she addressed. "Ship of Earth," she was murmuring. "We are here in the jungle, Jansca Sanders, who is speaking, and her mate, the sole survivors of the Earth ship *Cosmos*, brought down by the Mercurian invaders."

The wild thought hit me like a blow between the eyes. The jungle fever I dreaded had got its hold on my mate. She was dreaming . . . delirious . . . the first stage in that awful Venusian jungle fever to which we Outlanders—Martians and Earthmen—seem peculiarly susceptible and for which we have not as yet found any cure!

I reached out my hand. Jansca should have been beside me, within reach, but I struck only empty air. She had moved, was wandering not only in mind but in body. The second dangerous stage.

Her voice went on. "Do not answer. You will only betray your presence. But our directional beam shows you exactly overhead, high in the clouds. I caught a glimpse of you, steel ship of Earth, so different from the golden ones of the invaders. Can you rescue us? I shall cut out now and presently flash a light from our position, so that you may know exactly where we are."

I saw her now, a dim shape kneeling before something in the far corner of our rude shelter. I strode across to her and caught her by the shoulder. She gave a little cry that choked off as she realized it was only I.

"Jansca," I said in a quick whisper, "what are you doing?"

Her answer was a woman's, yes, this girl of another world differed little from the rest of her sex, whatever planet they come from. She dropped her head on my shoulder and began to cry softly.

"I—I can't believe it even now," she sobbed.

"Can't believe what?" I demanded.

"That I looked out the door—stared up at the sky, and saw a ship, an Earth-ship just showing through a break in the cloud ceiling."

"An Earth-ship? If you saw such a thing, what makes you so sure it wasn't a Mercurian craft?"

"The color—the polish of cobalt steel—the lines of an Earth Guard-ship."

"You're mad, dreaming—the fever!"

"No, dear one, it may have been a dream that woke me, that prompted me to creep from your side and look out the door—but what I saw was no vision though it lasted only the tenth part of a second perhaps."

There was that in her manner which convinced me, galvanized me into action. "You took a fearful risk," I said. "But never mind that now. Wake the others—quickly. I'll signal."

"But the light, Jack?"

"My ray tube. If I discharge it into the ground it will give flash enough for them to see—if they are watching."

"God pray they are, that my message

reached them. I trained the communicator beam overhead, just where I imagined the ship to be. I made it selective. It might have missed them.

"We'll know that soon. Hurry now."

She turned into the next shelter, which was really a separate compartment of ours. I took the ray tube from my torn and muddy jacket, turned it into the ground at such an angle that the discharge would splash a safe distance away. I pressed the button.

There came a blinding flash of light and I heard the hiss of steam as the ray struck and volatilized the water content of some soggy Venusian plant.

For the space of a heart-beat nothing happened. Then abruptly it seemed to me that the clouds overhead were a little thicker than they were a minute ago. A second later and I knew it was not a cloud I saw, but the dim bulk of a spaceship dropping towards us.

She came to rest on an even keel a stone's throw away. Lights suddenly flooded from her and a port was thrown hastily open. A voice called, "Quick whoever you are! We must make altitude at once."

I bundled Jansca and the others in unceremoniously. The port closed behind me with a clang and I was nearly thrown off my feet by the rapid acceleration of the ship's rise. For a space I could not speak, could do nothing but gasp and blink in the unaccustomed light. Out of the dazzling glare came a hand seeking mine, a voice that cried, "Wonder of wonders, so it's you I've pulled off, Jack, old man."

MIRACLE of miracles! The voice that of Glenn Vance, my relief! The ship, my own Guard-ship, the old *E. Twenty-two!*

"But how did you get here?" I asked.

"Harran's orders, Jack. That man must have worked like crazy. He called in every available Guard-ship, made us junction just beyond the Moon and sent out a supply fleet to intercept us there. We fitted out and mounted our weapons as we came along.

"There's not an Earth Guard-ship left between Earth and Mars and half the Martian fleet is only a day behind us. The rest are following with Tambard. We've orders to clean up this mess, no matter what the cost. But you're the man we want, the one who can tell us everything. The one person in the worlds I'm glad to have on board."

"There's a better one with me," I said. "Jansca, a Dirka once, a Sanders now."

He bowed.

"You'll have to look for the Mercurians," I said and told him of the weapons he'd have to face.

"I didn't think it was as bad as that," he said. "Eighty ships you say they have? We've nearer two hundred, counting the Martians."

"You may swamp them by weight of numbers," I said, "providing you keep out of range of their rays. You've the atomic ray rigged? Good. What's its range?"

"We haven't tried yet," he told me. "We . . ." What more he meant to say I do not know. The alarm bell from the locators cut him short and on the heels of that came a call from the observer.

"They're awake to us," Vance cried. "We can't see them, however." He was peering at the vision plate in front of him. "We'll simply have to trust to luck and the locators."

"Good," I said. "They can't use the ray while they have the invisibility force turned on. You've got that much. What about your other ships?"

"They're all right. They'll follow our lead."

Something flashed in the vision plate, a gout of blue flame. The ship reeled and for a moment I thought we were done for. But it must have been merely a blind shot unless, of course, one of our ships had incautiously ventured too low.

The men in the power room must have had their orders for I saw one of them glance swiftly down his sights, then jerk the lever of his gun back.

The blue flame in the vision plate vanished abruptly in an explosion of red-hot cosmic dust. That seemed to be the general signal to join battle. The Mercurians, confident in their superior

science, came on, disdaining all concealment.

One could no longer look at the vision plate to see how things were going. It was a wild riot of hot colors that seared the eye-balls, light that crackled like a living thing and that filled the sky with terror and death.

For a time I thought the tide was turning in our favor but gradually I began to realize with a sinking of the heart that our fleet was being forced higher and higher until we were struggling out in free space. Ever and anon one of the Guard-ships went dripping down in a torrent of blue rain, gleaming and molten, and the Mercurians grew more and more venturesome until it became evident that we were fighting a losing fight.

Jansca, close to me, looked into my eyes and I saw my fears mirrored in hers. Once again we were facing the prospect of dissolution together.

Abruptly I became aware that the vortex of the battle seemed to have receded. It was dropping below us, nearer to the planet's surface. Then too there were more Guard-ships. Space was filled with them. They were dropping like hawks out of the void.

"The Martians, the Martians are coming!" Jansca cried with a note of joy.

It was true. The Martian fleet Vance had mentioned as being a few hours in our rear had overtaken us. We were saved and the Mercurian fleet, by sheer weight of numbers, was being beaten back into the mud from which we could wish it had never arisen.

* * * * *

There is little more to tell.

Crippled and broken, the Mercurian fleet was chased and destroyed to the last ship and the bruised and battered planet left to recover from its wounds.

But for my own part I am not so sure. It may be that we have merely postponed the evil day, for after all, the invaders seem our superiors in many branches of science. The secret of their blue ray or rather the manner in which they generate it still eludes us.

Neither have we learnt how men like Nomo Kell—for it is certain that he was not the only spy moving about in interplanetary circles—managed to reach our worlds and establish their citizenship there.

Myself, I do not think that we shall ever be free from the possibiliy of invasion or solve these other mysteries until the day when we feel we are enough advanced to send our own expeditions out against this world which has once threatened the security of the inner planets.

Meanwhile I have Jansca to occupy my thoughts and fill my heart to the exclusion of all else. She is the best of wives and mates, as proud of me as I am of her, though perhaps the proudest moment of our lives was when she was given her badge and made a member of the Interplanetary Guard with the same rank as I hold myself.

She values that little silver emblem more than anything else the planets can give her. In an idle mood I sometimes tell her she cares more for it than she does for me. But that I know she does not, for has she not again and again given me ample proof of her love?

And I? Well, I have told my story and I would rather not repeat here what the Council said to me. It was flattering, all too flattering, and totally undeserved. I had little or nothing to do with bringing about that crushing defeat of the Mercurians.

I shall always maintain, and Jansca agrees with me, that the real saviors of our planets were the men who died the night the blue ray of the Mercurians sliced the *Cosmos* as a hot knife will slice through butter.

Arenack, Hume and my wonderful crew of gallant Martians, I salute your shades. May the God of the Planets balance the manner of your passing against whatever faults you had in life and bring you to that ultimate Elysium—by whatever style we care to call it—where weary heroes find rest and peace at last.

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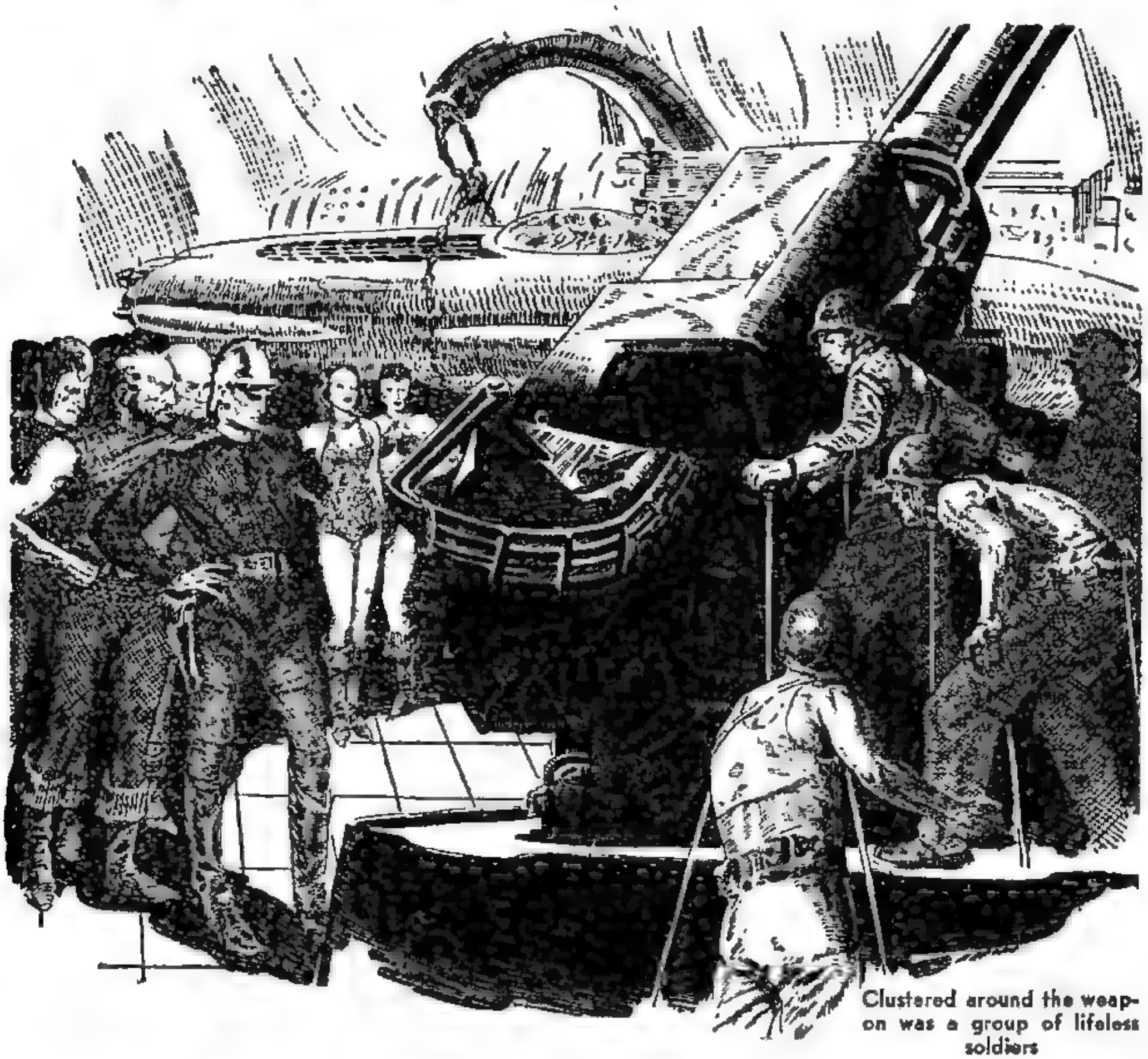
Featured Next Issue: THE CONQUERORS, a Novel by David H. Keller

Our Earth was a busy place the day the aliens came from outer space, yet they found us dead—or so they thought!



Clustered around the weapon was a group of lifeless soldiers

EARTH'S LUCKY DAY

By FRANCIS FLAGG and FORREST J. ACKERMAN

IT WAS Hall Browning of *International News* who coined the phrase and he lived and died without ever knowing how ironical—or perhaps how profoundly true—it was. In America, even in the staid papers of London and Paris, it screamed from front-page headlines. And in papers everywhere, in every civilized country throughout the world—with the exception of those still under

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the sway of United Forces— it topped melodramatic articles even if in smaller type and on inside pages.

"Earth's Lucky Day," Hall Browning wrote and broadcast and millions of people mouthed the phrase.

It was June 4th, 1953, and the radio news dispatches and the tele-lino-writers scattered the tidings to the four corners of the compass immediately following verification of the signal triumph of science and the glorious victory of International Armies, hours before the world knew of the strange disappearances.

The world was in a ferment on that June day—and night.

It was day in America. Outside the fence that hemmed in the super-power plant and the huge stratosphere globe of glassite and steel, thousands of people moiled and watched. So great was the press that at one place the fence collapsed and mounted police and soldiers had to drive back the crowd.

Krell, with his co-worker and fellow scientist, Maxwell Dredd, busied himself with last minute details. Then they entered the huge globe their genius had devised and the door was sealed. A million eyes watched the giant globe as it rose and a cry of awe and wonder burst forth. It was astounding to see such an immense thing rise in the air as surely and as swiftly as a fast elevator.

"Lord!" said a stout man, mopping his brow with a handkerchief. "What if the power were to fail!" A girl said to her sweetheart, "Think of it! They're being lifted up on—what do you call it?—an energy beam."

"Yeah," he said. "Something like that. It's stupendous."

"Marvelous," breathed the girl.

THE huge globe rose higher and higher, glinting in the sun, dazzling the eyes that watched, every moment dwindling in size until it was a toy balloon, a plum, a marble.

"I see it," yelled a small boy. "I do, I *do!* Just a speck." And people with opera glasses and binoculars focused them aloft. But soon the globe had lifted beyond even their power to visualize, had disappeared into the blue immensity of space.

Forty-eight miles high! Krell and Dredd looked at their instruments and then glanced at each other in triumph. Dredd regulated the flow from the oxygen tanks. Both men looked through curved glassite windows at black, star-pricked space. Never had they seen it so black, so vacuous-looking. The globe was stationary at forty-eight miles and a slight fraction. The rod of energy could lift it no further. In radio communication with the power station so far beneath them, Krell answered anxious inquiries.

"Everything okay so far. Both of us feel fine. The air is somewhat close and heavy—colder."

He signed off and busied himself noting the figures of a half-hundred delicate instruments which registered atmospheric density, temperature outside the globe and the action of cosmic rays. The powerful telescope carried by the globe was turned upon interesting stars and planets which were viewed with a clarity never before witnessed by man. Pictures of the heavens were taken.

From Earth the observers at the power station called again anxiously, "Dredd —Krell."

Dredd answered this time. "Globe speaking." Methodically he gave certain instrument readings, certain observational data—and then, in the midst of a sentence, stopped abruptly.

When next the power station achieved communication with the globe it was Krell speaking. "Dredd called away by momentary disturbance in the thin outside atmosphere. Temperature rose a degree and a fraction. For an instant there was a blur or something like it before the telescope. We are puzzled at such phenomena happening all at once. Ah—just a moment!"

His voice sounded as if he had turned his head away from the microphone. "What's that, Dredd? The blur again?" Then suddenly, "On Earth there—on Earth—my God!" His voice went up—up, then ceased suddenly.

In vain the observers at the power station called frantically, "What is it? What's the matter? *Krell! Dredd!*" Ominous silence was the only answer. And when the power was reversed and the rod of energy lowered to earth nothing came with it—nothing. Forty-eight miles above sea-level, in the thin cold regions of the stratosphere, the globe and the two dauntless scientists within it had disappeared!

On the same day that the globe rose into the stratosphere, at the same time, though not at the same hour, utilizing the self-same principle of the rod of energy generated in a compact motor as an invisible piston functioning with tremendous speed and little friction, Ivan Bakunin, the Russian wizard, demonstrated the infinite possibilities of his new type of streamlined car and so paved the way for the scrapping of older and slower methods of transportation.

The car itself, thirty feet in length, shaped somewhat like a slim cigar but with oddly grooved sides and top and with an undercarriage consisting of a single runner and imbedded in a grooved track and cushioned with compressed air, was an object of intense interest. Not alone to thousands of casual spectators but to keen-eyed engineers from inter-nationalized countries.

It was well known that Danvers, Incorporated—which was but another name for the autonomous governments of Canada, United States, Mexico and the South American Republics—was financing the venture.

The single-grooved track, describing an immense circle twelve hundred miles in circumference and running through a half-dozen central states, had taken a huge sum to build. Here too, as in the case of the stratosphere globe, police, foot and mounted men and regiments of soldiers had difficulty in controlling the crowd. For a time it seemed as though the car itself was in danger from the mob.

However the authorities had taken the precaution of placing loudspeakers at strategic points before the people gathered. And Bakunin himself, speaking into a microphone, pleaded with men and women to be quiet and orderly, to stand in their places and not to endanger their lives or his machine. This materially aided in calming the enthusiasm, the rising hysteria, and allowed the police and soldiers to control the situation.

Bakunin, who it seems was not alone a famous engineer, a political radical, but somewhat of an orator as well, spoke at length of his invention.

"Not for gold alone," he said in part, "or merely for empty honor but to bind more closely in peace and harmony the various countries and races of men I am striving to promote more and yet more speed in methods of transportation. Anything that brings distant countries within a few hours' travel of each other makes for tolerance and understanding."

HE TOLD of various speed records, of how the famous streamlined train *Zephyr* in 1934 had reached a maximum of a hundred and four miles an hour in a run from New York to Chicago. How the *Thunderbolt* in a run from Moscow to Kiev had bettered this ten years later by thirty miles. And how he himself the year before in *Lightning One* had attained a speed twice as fast per hour. All these were land records, he said.

In the air aeroplanes had reached as high as six hundred miles an hour but only under exceptional conditions and with grave danger to life and limb. Today he hoped to demonstrate in this new car of his, the *Lightning Two*, speed in excess of six hundred miles an hour as a safe and feasible way of land travel.

With that, he bowed his thanks to the tremendous and deafening waves of applause and entered the hermetically enclosed compartment of his car. Piotr Sasulich, his mechanic, started the secondary motor and the strangely shaped and fluted craft, with the name *Lightning Two* in large gold letters on its silvery side, commenced to move.

The noonday sun glinted on its body

of dulled metal and silver and in half a hundred radio phones, half a hundred high-salaried scribes and famous speakers hired for the occasion shouted hoarsely, "Bakunin enters his car. The door is sealed. The car moves. The crowd is roaring. The police can't control it. It's breaking through. If the car doesn't get away—quick—but she's off! She's off!"

And she was off.

Inside the car Bakunin had taken the controls and started the energy rod piston. In the sealed-in gyroscopically hung cabin neither he nor Piotr Sasulich could tell they were moving. Only the instruments on the instrument-board attested to the fact.

The mechanic went about his duties silently, phlegmatically, a limp cigarette drooping from one moist lip. At the official starting station a hundred miles down the line they saw a blur go by. The electrically-controlled starting bell clanged and the automatic stopwatches noted the time with an unhuman accuracy.

All along the twelve hundred miles of curving track spectators thronged—in the rural districts and occasional villages knots of countryfolk and farmhands—in the large cities and their environs crowds running to the hundreds of thousands. Bells clanged officially to note the passing but no human eyes could see the speeding demon, smoothly, silently hurtling by.

Twelve hundred miles an hour!

Even in the hermetically enclosed cabin, whose slightest sway denoted movement at all, Bakunin glanced at his speedometer with pale face and half-incredulous eyes. At the official starting station the observers went wild. The high-salaried scribes and famous speakers yelled joyously into their phones.

But such colossal speed, once attained, cannot be braked in a league or twenty leagues. Though Bakunin shut off his energy rod piston the car hurled three hundred more miles before spectators glimpsed it as a blur. And it was at Eureka, a small town of forty thousand inhabitants, that the incredible incident occurred.

IT must be made clear at this point that the hurtling car was seen more or less clearly by thousands of people. Photographic plates attest to this and furthermore Bakunin and his mechanic were alive at the time. The car was equipped with a radio and, doubtless relaxing in the moment of triumph from the concentration and anxiety which must have gripped him until then, Bakunin chose that particular thirty seconds to broadcast a message.

Hundreds of receiving sets picked it up and there can be little doubt that it was the Russian wizard talking. For there could be no mistaking his distinctive voice, with its peculiar foreign accent and yet almost too-meticulous enunciation of English words.

Furthermore, the fragmentary message was preceded with the following identification—"*Lightning Two* talking —*Lightning Two*," And then, "We are safe and well. No inconvenience at all from stupendous speed, transportation is . . ."

But the message was never finished. It was at that moment the weird, the uncanny thing happened. People mentioned feeling a wave of heat—"like a breath from a furnace." Moreover instruments in a local weather bureau showed that at that moment there was an actual increase in heat of a full degree. Then they saw the blur, the shadow.

For an appreciable instant the sunlight darkened. The blur seemed to encompass the speeding car. When it lifted the car was gone. At first, naturally enough, it was held that Bakunin had increased his speed for some unknown reason. But along that twelve hundred miles of circular track no bells rang to tell of his passing, no automatic watches clocked his pace. In vain thousands waited and watched. Like the stratospheric globe with Krell and Dredd the *Lightning Two* had disappeared and neither it nor its daring occupants were ever seen again!

THE world, we have said, was in a ferment on that fourth day of June, 1953. While scientists labored to increase the wisdom and power of mankind and humanitarians toiled, blind hatred and greed strove with the spirit of progress and light.

When it was one p.m. in New Jersey, noon in the Middle West, it was night in Europe. Two great armies faced each other on a thousand-mile front. The United Forces of Balco faced those of the Internation Nations. Under the stars five million opposing men prepared themselves for what their respective leaders believed to be the final and decisive battle of a war that had already raged for two years and exacted its toll of wealth and blood.

In trench and dugout, in stronghold and reserve sector, soldiers of the International Army listened to the voice of their commanding general addressing them through loudspeakers from General Headquarters.

"Bulwark of Civilization," he cried. "Vanguard of Freedom and Light! This night, in a few hours at the most, you hurl your valor against the black might of reaction and greed. Remember you are fighting to bring peace and prosperity to a war-weary world, to strike forever from the limbs of yourself and children the shackles of ignorance.

"War must end! The philosophy that makes of blood and carnage, of suffering and hate, something high and noble, must be rotted out, forever defeated. But in the hour of victory remember you have come to free your brothers not to enslave them. Soldiers of the International Army, the ideals and principles of harmony, co-operation, economic well-being must prevail. The eyes of the International World are on you. Down with hate!"

Along the miles of crumbling trenches applause burst forth like a hoarse muttering of guns and was answered by a similar roar from opposing trenches, for almost at the same hour and minute the general commanding United Forces also addressed his men.

"Soldiers! Heroes—inheritors of the glorious traditions of Alexander, Caesar and Zelig the Great, the future of your glorious race depends on you. Yonder lies the enemy who would corrupt you and your children with the mawkish sentimentality of internationalism. He would do away with war, with military exploits that make for greatness, for martial courage and the fraternal comradeship of brothers-in-arms.

"War is the cathartic that purges and cleanses nations. It is the scythe ordained of God that cuts down the weak and the unfit. The strong, the brave, have no need to fear war. He who would do away with war, who would reduce all nations and races to a tame equality, is an enemy of virtue, of courage, of mankind itself. Soldiers! Heroes—the eyes of history are on you. Down with Internationalism! On to victory!"

As we have said, the thunderous applause of opposing armies in answer to the two eloquent speeches rolled and reverberated along miles of rotting trenches and dugouts. The hour for battle was at hand and masses of men made ready for the ultimate risk and sacrifice demanded of them in the name of peace and international goodwill, in the name of pride and hate.

Washington spoke to London and Paris to Moscow. The Capitals of United Forces talked to one another, blonde and dark, yellow and white. For such is the inevitable logic of force that arrogant theories of race and creed go down before kindred ambitions and military necessity.

Who should attack? The men were ready and the men behind the guns. The poison gas was ready and the fighting planes to carry lethal death aloft and scatter it broadcast. Soldiers with machine-guns, bayonets, hand-grenades, bullets were ready—yet the opposing armies waited like hounds straining on a leash.

General Dobell of United Forces walked impatiently up and down the long staff room, his staff officers respectfully keeping out of his way. His moustache bristled. On the tables large maps lay unrolled. On the wall the battlefield

was pricked out in relief with colored lights flashing on and off, showing the constant movement and positions of troops and batteries.

He paused to study this panoramic map. He hurled orders right and left and orderlies hastened to speak into radio phones. Suddenly an orderly said, "Sir," and held out a phone. General Dobell snatched it. "Yes, yes, Dobell speaking."

The voice of Johann Pound, war minister of Balko, came from the capital six hundred miles away. "General, it will reach you within the hour. You understand—the weapon—the weapon Stefan has been laboring day and night for weeks past to perfect. Within the hour. Do all in your power to avert giving battle until it arrives."

WHILE this conversation was taking place a spy, picked up in enemy territory by plane and hurried to International Military Headquarters, was reporting to General Lee Mallory, supreme commanding officer of the International Army. General Mallory regarded the spy keenly. "You are sure this is true?"

"My sources have hitherto been reliable, General."

"A new vibratory weapon, you say?"

"That the famous physicist and arms manufacturer, August Stefan, has invented."

"You could get no data as to its construction?"

"None, General. The plans were too well guarded. My informant was only able to speak of its existence and of its deadliness."

"It will be utilized in the coming battle?"

"That I cannot say. There are rumors to that effect. Its construction is being rushed. Perhaps—"

The general turned to his staff. "Gentlemen, we attack within the hour! It is imperative there be no delay." He turned to a vast relief map, pricked out in colored lights, similar to the one on the wall of General Dobell's headquarters.

"Here, and here, pour in the reserves." He barked his orders. Staff officers sprang into action. Orderlies rushed back and forth. "The enemy must be given no time to bring up the new weapon. Lay down a forty-five-minute barrage. The aerial squadrons will support—"

Twenty miles back of his front line trenches General Dobell lifted his head with a jerk. "What is that?"

"The guns, sir."

"I know it, fool! Get the front-line intelligence posts—quick!"

"Front-line posts speaking. Enemy heavy guns increasing bombardment. Terrific barrage being laid down along whole front. Attack expected."

General Dobell looked at his watch. The earth shook. The building shook. The roar of the guns increased. "Orders, sir?"

"Wait—wait."

Out there in the darkness twenty miles away men huddled to earth like rabbits, like half-blinded moles. The shells rained on them and exploded and the night was hideous with noise, with sulphurous lights and smells and the groans of the wounded and dying.

Forty-five minutes.

"It has arrived, sir."

General Dobell gave a cry of satisfaction. "Let it be taken forward and put into position at once—at the place prepared—here." He pointed to the map. And then, "Wait! I shall accompany it myself."

The famous Stefan was in charge. The military mechanics worked like beavers. "It doesn't look much," Stefan said, noting the high commander's disparaging regard, "but you shall see, General.

"The ray is generated here, directed through the muzzle over there. As it travels it spreads. Invisible, yes—ten miles away it covers three hundred miles of front. Everything it touches vibrates—men, guns. They are shaken to pieces. Powder blows up, ammunition dumps. Behold!"

He deflected a lever. Vacuum tubes glowed. Like a purring cat the grotesque

mechanism awoke to life. The range-finder made an adjustment and Stefan lit a cigarette. At that moment, the Moon peeped over the eastern horizon flooding the Earth with silver light.

Minute by minute it climbed heavenward and looked down with indifferent face on the hell of war below. At International Headquarters General Lee Mallory pointed to a number and spoke. The barrage lifted and the International soldiers, who had advanced slowly under its cover, came on in waves.

For what followed we have the evidence of eyewitnesses, an aviator flying overhead—a famous ace—two war correspondents privileged to accompany General Dobell but who had stood some distance from him and his staff when it happened—several orderlies and an unverifiable number of officers and men in a nearby reserve corps.

General Dobell, in his interest in the new weapon, in his faith that victory reposed with it (hadn't War Minister Pound assured him of this?), made the unmilitary mistake of quitting general headquarters without issuing a single order of any vital importance.

His staff accompanied him, leaving behind only those underlings and routine clerks whose habits of military discipline and blind obedience to authority were such as to preclude the showing of any individual initiative.

Such was the situation when the famous Stefan, tossing away his cigarette, thoughtfully twisted a dial. "At your orders, General." The general gave the order in a low tone as if he realized in that moment the frightfulness of the thing he was doing.

Stefan pressed a button. An intense flame, bluish in color, hovered over the mouth of the muzzle. Stefan glanced at the illuminated dial of his wristwatch. "In exactly thirty seconds," he said—but it happened in fifteen.

The night was cold and clear. The wave of heat was distinctly felt. "As if a warm breath blew from the tropics," one correspondent phrased it. The light of the Moon darkened, as if a shadow passed across the Moon's face. It could not have been the smoke of the batteries because the wind blew westward and the Moon was still climbing the east. There were no clouds in the sky.

Around General Dobell and his staff, around Stefan and his deadly vibratory machine, the blur descended. All those who witnessed it rubbed their eyes and cried out in amazement. The lone aviator overhead, glancing downward through binoculars, muttered a startled oath. For the shadow obscuring the light of the Moon, the blur enveloping the small group on the ridge, lasted but a second.

TEN miles distant, unaware of the miracle that had saved them, of the annihilating vibration ray arrested in its destructive course, the International soldiers carried the enemy first-line trenches, swarmed on to the second, the third.

There is no need to tell how the soldiers of United Forces, after a brief but fierce resistance, demoralized without its higher command, lacking a concerted plan of action, broke and fled. How reaction and hate were forced into sullen surrender is now a subject for history. It is enough here to note the incredible, the astounding thing which occurred atop that moonlit ridge on the night of June fourth, 1953.

For when the shadow lifted, the blur disappeared, General Dobell and his staff, the famous Stefan and his weapon, had disappeared also, had vanished as if into thin air. Witnesses of the uncanny occurrence were left staring at the vacant spot on which but a moment before they had stood!

What had been the cause of it all—the cause not alone of the mysterious disappearances narrated above but of other unaccountable happenings (such as the vanishing of a small library in Lofton, Massachusetts, for instance)? An astounded world asked itself this question and for twenty-five years asked it in vain.

There were those who said Bakunin and his car had disintegrated from ex-

cessive speed, that General Dobell and his staff had been wiped out when the vibration ray machine backfired. But this could scarcely be argued of Krell and Dredd in their stratospheric globe.

There was, of course, the theory that the globe had drifted off into space. But giant telescopes had swept the heavens day and night for a sight of it, all in vain. Besides, the globe had been of immense weight. It could not have drifted. It would have crashed to Earth not far from the power station.

Scientists perceived in the seemingly separate events phenomena common to them all. In each of the three major cases mention was made of heat waves, of shadows and blurs. It is only by inference that the Lofton Library affair is connected up with the three others. In that case the books were reported vanished but not the building.

But beyond coming to the conclusion that the agency responsible for the mysterious disappearances was the same wherever manifested no adequate explanation was given by science. Of course religiously minded people saw in it all the hand of God.

It was flying in the face of Providence to rise forty-eight miles into the air and to attempt to probe too deeply into the secrets of nature. It was daring the wrath of divine love to travel at such an ungodly speed as twelve hundred miles per hour.

The hand of God had reached out over the battlefield and where were the warlords, the preachers of hate and reaction? So declared people and institutions prosaically, superstitiously and without much success. Then, twenty-five years after, Professor Jimson and I discovered the cylinder.

We were in the Rainbow country of Northern Arizona, heading a group of scientists from the Smithsonian Institute, when we first heard of it. An Indian spoke of a huge rock that had fallen from the sky some years before. Immediately we thought of a meteor.

But our first glimpse of the colossal mass, half-buried in the earth at the bottom of a wide canyon brought us to a halt with a gasp. For no meteor was ever such a peculiar color nor so meticulously shaped.

Colossal—I have called it that. But you have no idea how immense that strange cylinder loomed, how astounding it was to come upon in such a deserted place. Though more than half its length was buried it towered over our heads like a high building and its girth was in proportion.

What was it? How had it come to be where we found it?

"This is not a natural mass of metal," said Doctor Tellegen, the third man of our party. "Look. You can see where it shows signs of having been worked, fashioned." This was true. The metal was chased in spots and delicately carved. We all stared at one another.

"In that case," said John Smythe, the fourth member of the expedition, "it may not be solid either."

Not solid! Then what could it contain? With one accord we set to work with drill and hammers. Later we augmented this with an electric drill and battery brought to us by plane. I shall not weary the readers with a detailed account of how we toiled to pierce the metal shell, of how we blew out a section of it and entered the interior of the cylinder. What we expected to find, I do not know. What we actually discovered. . . .

"Lord!" said Tellegen, gripping my arm. Our powerful lights lit up the gloomy interior. We had drilled our way into the cylinder just above what seemed a central floor or partition. Some twenty feet back, clustered around a strange machine and supported by metal uprights, was as singular a group as one could expect to see. The lights played weirdly on pale set faces and lifeless bodies. These bodies were clothed in a species of military uniform, had helmets on their heads.

THEN our eyes lifted and traveled beyond this tableau to remoter distances and we saw the slim fluted craft with its silvery gleaming sides on which a name was etched. At the same mo-

ment, Professor Jimson—by accident, perhaps—focussed his powerful electric torch overhead and called our attention to what hung suspended there.

We stared, fascinated. Through glassite walls we saw the two figures with white faces staring out. Dead faces. . . .

"What does it mean?" breathed Smythe.

"It means," said Tellegen at length, "the impossible, the incredible. Can't you read that name yonder?"

"*Lightning Two,*" I half whispered.

"Yes," said Tellegen, "Lightning Two. Bakunin and his craft! And above there in their globe, Krell and Dredd. And this group—this group here. . . ."

"General Dobell and his staff," I cried.

"Yes," he said, "General Dobell and his staff. And the Great Stefan."

We stood for a moment, staring at one another, incapable of speech. Then Smythe gasped, "But *how* did they get in here? Who sealed them in?"

No one answered. There was no answer to make. Twenty-five years ago those men with their machines had vanished. And here, two and a half decades later, we found them entombed in a strange cylinder in the wilderness.

Recovering from our first overwhelming astonishment and with more than a little dread we explored further. The first half of the cylinder was filled with the objects we have described. In the lower portion we found the plates. Visitors to the Smithsonian Institute at Washington may see one of those plates exhibited, observe the immense letters etched on it.

But the gist of the letters engraved on all the plates has never been given to the public. I shall not speculate as to the reasons for this. Suffice it to say that the discovery of the plates is fully authenticated. In addition there is the indisputable fact that the metal of which they are composed is utterly unknown to Earth.

The huge cylinder and the plates found in it were never fashioned by Earthly hands. Of that science is agreed. Yet the printed words on the plates were in English!

Yes, in English—though this English was not perfect and the letters were enormous in size, being etched into the metal with almost painful fidelity and by a process impossible of duplication.

It took twelve hundred of the plates —and each plate was twelve feet long by three in width—to contain some five hundred words and characters. The English words formed a brief document of such singular import, one so utterly beyond the bounds of credibility in what it implied, that were it not for the mute yet eloquent evidence of metals alien to Earth, of strange methods of etching, of certain word arrangement and sentence structure, science would have dismissed it as a hoax.

Yet there was the evidence of alien metals—and too the mysterious, utterly incomprehensible characters heading the document and ending it.

Other-worldly they seem, as other-worldly as the unknown metal on which they are etched, adding to the cumulative effect of evidence which exacts a certain measure of belief from the most doubting of scientists. With this for a foreword we give the incredible document as copied faithfully from the plates, with only those unavoidable corrections necessary to a clear rendering of what was plainly meant.

JDO—92-98-94. Some strange disaster has evidently befallen this little planet. The silence of death hangs over it. Everything seems to be in a wonderful state of preservation, yet dead—without life or motion—as if its inhabitants had been going about their daily tasks when the unexpected end came.

That these minute beings—so different in size and structure from ourselves—enjoyed a certain measure of intelligence and civilization is undoubted. In one of the higher levels of the small planet's atmospheric envelope we discovered a globe containing primitive instruments of observation and two (here an incomprehensible word was used, but that it meant *men* I am certain and so we translated it) men whose bodies, still instinct with action, were arrested by death.

We circled the planet, looking for signs of life and movement, but could find none. Twice we were momentarily deceived. Believing that motion was detected on the planet's surface we descended. But some idiosyncrasy of this rare atmosphere must have misled us. We found what was evidently a vehicle for transportation standing on a grooved track with thousands of the inhabitants, petrified in crowds and scattered groups, some distance away.

The second case was somewhat similar. Conditions observed indicated that fierce war must have been raging when the mysterious malady swept over the battlefield. Soldiers were struck immobile at the moment of attack and defense. Even projectiles hung suspended in air.

A small group of warriors and an odd-looking weapon round which they clustered were taken aboard—as previously to this were the globe we have mentioned and the vehicle. These, along with several other objects of interest, will be examined at our leisure.

In accordance with your instructions the thought records of the planet's inhabitants have been mastered. As you know the languages of reasoning beings, whatever their form or shape, follow certain basic cosmic laws. The difficulty of interpretation lies, therefore, not in the language itself but in the recorded size of the thought symbols.

These were infinitely small, in fact invisible, and called for the utilization of the most powerful of dimensional-scopes. However this difficulty was overcome and the present record will be imperishably registered in the planet's language, enclosed in the (here was another strange symbol which could mean nothing else than the cylinder) and along with the little beings and machines picked up for examination returned to the planet's surface. It is located (a string of symbols follows).

The present forms of life save (perhaps) in bacterial shapes too infinitesimal to permit of examination, have perished off the face of this little world. It is now one vast sepulchre. Unfortunately, with our gift of eternal life and understanding love, we have arrived too late. But that the life processes will again produce intelligent beings on this planet, all our wisdom assures us.

For this reason we leave behind us a record of our visit. In fifty million years we shall return again. In the meantime let us go on to the remaining planets of this small solar system where, haply, reasoning creatures may be found—alive.

SO ends the strange document; and it can be imagined with what utter amazement we first read it, with what mixed emotions of incredulity and belief the world of science first learned of its existence.

But as I have said above there was the evidence of metals unknown to Earth to convince the doubting and the completeness with which it accounted for the mysterious disappearances of June 4th, 1953. Yet for all that, there was something which had to be explained away and I mentioned it to Professor Jimson and to Doctor le Strange of the Paris Institute.

"Granted," I said, "that something mysterious visited Earth and sealed the globe and the car with their occupants and General Dobell and his staff into the cylinder, how was it that no eye on Earth perceived such visitors?

"And how was it such visitors could view a speeding car, a battle in progress, the excited movements of Krell and Dredd and of thousands of people, yet write as if they believed life to be extinct on Earth and as if they had witnessed no movement, no action?"

It was Doctor le Strange who answered me at length. "It is all a profound mystery," he said, "and yet—aren't you mistaken in thinking no eye perceived them? Weren't the blur, the shadow, the heat—them. All of them man could see or feel?

"You have noted," he continued, "that the strange document implies the visitors to have been of colossal size. They evidently came from outside our Solar System, from a world immensely larger than ours, where conditions of time, even of organic structure, might differ radically from what prevails here.

"If we imagine beings whose day is our second or minute, whose physical nature is in accord with such a condition of affairs, then we imagine beings unable to hear us, to hear the sounds of Earth or to perceive our motions. To them we might well appear motionless, stricken with death."

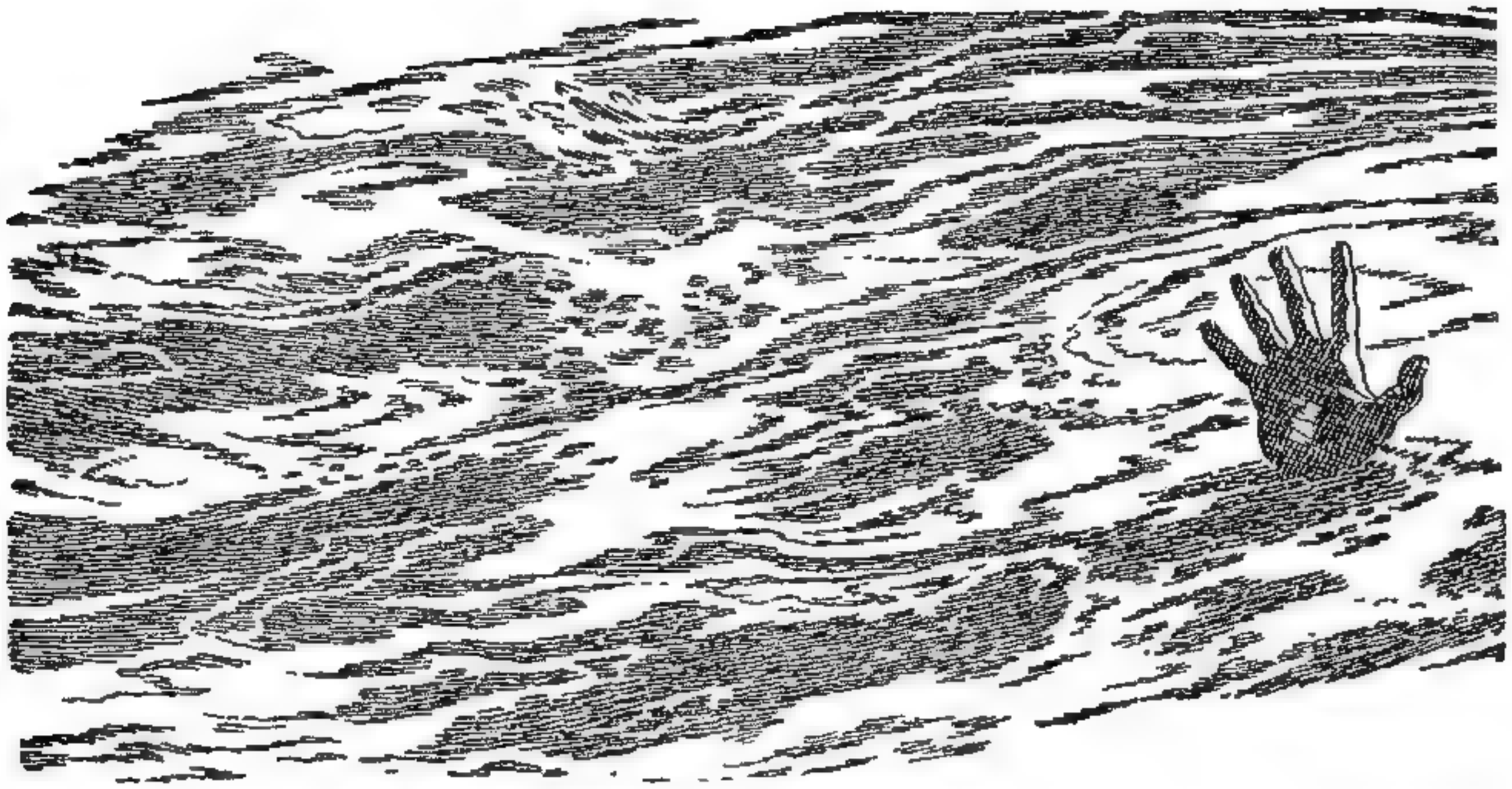
We looked at one another silently. "And Krell," I said, "and Dredd and all the other poor devils, unable to make their plight known—dying with eternal life around them."

"Oh, I know," said le Strange, "that this explanation is not entirely satisfactory, that it has certain flaws. But the physical reactions of beings, living at a time-rhythm immensely faster than our own, would be so complex, so utterly unpredictable to us, that it is absurd to advance this objection or that. I can only say that my theory best fits the facts in the case."

It did. It does. And so the world of science, the world of man, has decided.

●

Next Issue: VIA THE HEWITT RAY, a Novelet by M. F. Rupert



The Osmotic Theorem

A Novelet by

CAPTAIN S. P. MEEK, U.S.A.

CHAPTER I

Critical Stage

I ENTERED Professor Hurlburt's study with a feeling of trepidation. In fact, if Alice, who shared somewhat her father's obstinacy, had not been adamant, I doubt whether I would have ever pumped up enough courage to beard the lion in his den.

"Come in, Lawrence," he said as he recognized me. "I was about to send for you."

He smoothed back the sparse grey locks which emphasized the unusual height of his brow and came forward to grip my outstretched hand in friendly greeting.

I was at a loss to understand his unwonted cordiality, a cordiality which extended to leading me to an easy chair and inviting me to be seated.

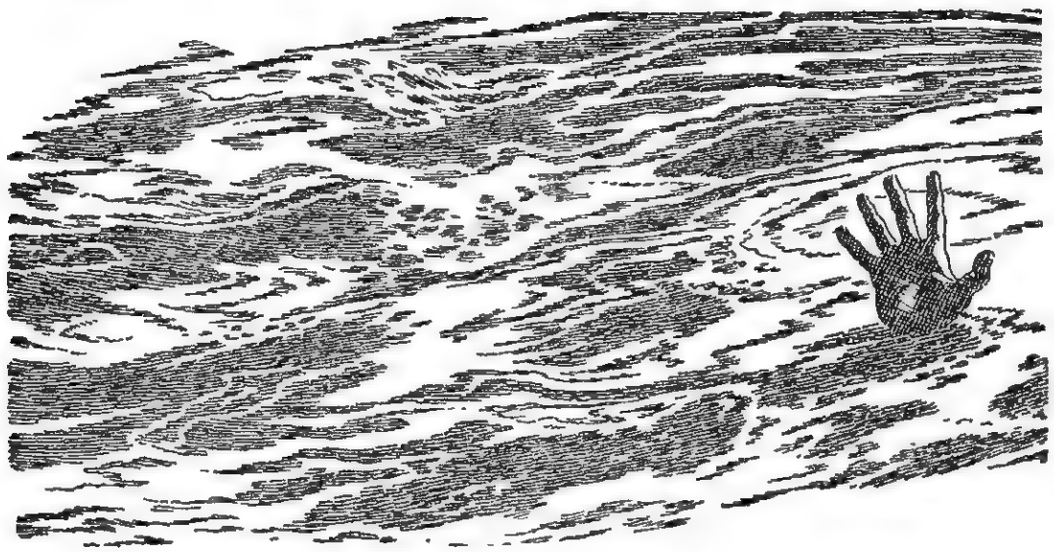
I felt an inward qualm and wondered if he had an inkling of my mission. He was apt to appear most friendly just before the vitriol began to spit from his tongue but I could detect no lurking trace of sarcasm in his tones.

"I come to ask a favor of you, Professor," I said with an attempt at an offhand manner, "a very great favor, in fact."

"That's fine!" he replied, rubbing his hands together. "I will be more than glad to accommodate you if it lies in my power. Consider your request granted and let me ask you a few questions. What do you know about the composition of the interior of the earth?"

"Why—very little," I answered, surprised.

"That I grant you," he replied with a smile, "but it does not answer my ques-



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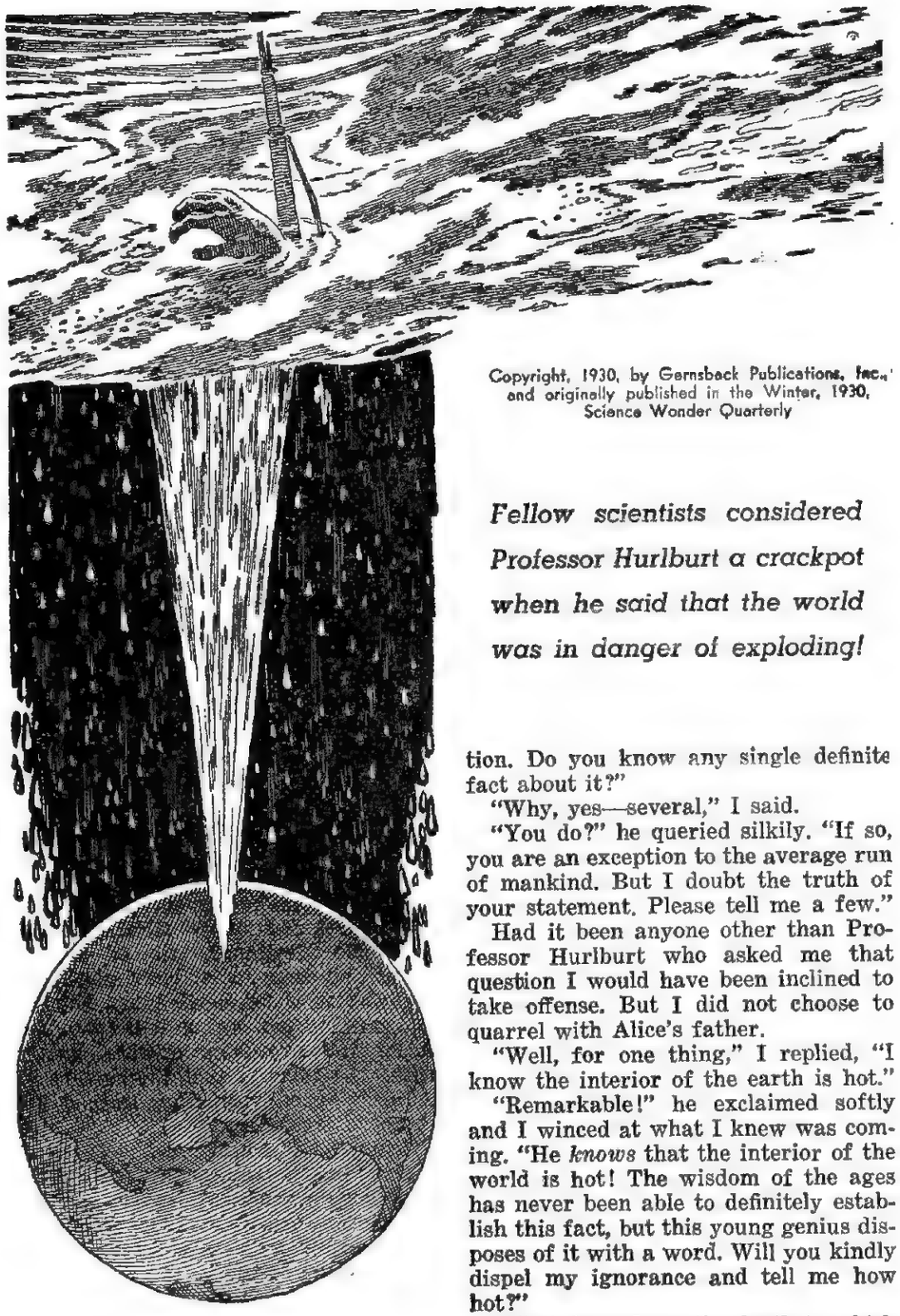

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Fellow scientists considered Professor Hurlburt a crackpot when he said that the world was in danger of exploding!

"Why, yes—several," I said.

"You do?" he queried silkily. "If so, you are an exception to the average run of mankind. But I doubt the truth of your statement. Please tell me a few."

Had it been anyone other than Professor Hurlburt who asked me that question I would have been inclined to take offense. But I did not choose to quarrel with Alice's father.

"Well, for one thing," I replied, "I know the interior of the earth is hot."

"Remarkable!" he exclaimed softly and I winced at what I knew was coming. "He *knows* that the interior of the world is hot! The wisdom of the ages has never been able to definitely establish this fact, but this young genius disposes of it with a word. Will you kindly dispel my ignorance and tell me how hot?"

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"That depends on the depth to which

you penetrate," I answered. "The temperature increases as you go deeper."

"Splendid!" he cried, rubbing his hands. "That explains, no doubt, the reason why the water from artesian wells, which are usually quite deep, is always at so high a temperature, and also why geysers, which usually come from near the surface, are invariably icy. It proves the fallacy of going into a cavern or down into a mine on a hot day for the purpose of keeping cool.

"I have only one question to ask you and doubtless you have an answer on the tip of your tongue for that too. Why is it that many of the deepest borings into the earth's skin fail to show as high a temperature at the bottom as obtains on the earth's surface?"

"They probably happen to be at points where the crust of the earth is unusually thick," I answered.

"How interesting!" he cooed. "I presume, then, that the interior of the globe is a fiery mass of molten rock."

"Of course," I replied. "The existence of earthquakes and volcanoes is enough to establish that without question."

"Surely," he replied, "beyond question. You have doubtless seen samples of this molten rock?"

"Yes indeed," I said. "I happened to be present the last time that Kilauea turned loose and I saw the pit of Halemaumau filled with it."

"Did you take samples of it?" he asked.

"I did."

"And was the molten rock of the limestone type or of the granite type?"

"Neither. It was Aa lava."

"Which happens to have none of the characteristics of either of the two common rock structures of the surface, the stratified and the igneous," he replied, "and which is a substance found nowhere on earth except in discharges from volcanoes.

"Did it never strike you as strange that lava has never been found except in the immediate vicinity of volcanoes, either active or extinct? If the whole earth was at one time composed of this molten rock, why was none of it left behind when the mass cooled enough to form a crust?"

"Because it has a different specific gravity from the rocks which compose the crust," I replied.

"I am well aware of that. Lava is much lighter than granite. For that reason it seems strange to me that the granite should have floated and so solidified first, leaving the lighter lava to sink to the bottom and so remain in the center. Of course, you can explain that fact?"

SO far I had kept my temper, but my gorge rose and I flared up. "I have told you what I know!" I said shortly. "I didn't come here to be subjected to an examination on my scientific attainments or to be called an ass for believing what is common knowledge among educated men. The apparent contradictions which you have pointed out can be readily explained by men who have devoted more study to the subject than I have."

Instead of flying into a rage the Professor threw himself back in his chair and chuckled. "You are partially right," he said. "Those contradictions can be explained by *a man*, not *men*. *I* can explain them."

"All right, explain," I replied, still nettled but amused by his calm assumption of superiority.

"Gladly," he answered. "Those discrepancies, and many more which I have not mentioned, can all be explained by three facts. The first is that the interior of the earth is not hot but cold. The second is that it is composed not of molten rocks but of water-soluble salts. The third is that the surface of the earth is not contracting. Instead, the center is expanding."

"Nonsense!" I exclaimed.

My remark seemed to amuse him. "And why nonsense?" he asked. "Can you cite one specific fact or one tenable theory to disprove my statements?"

"Well—volcanoes, for one thing. They certainly point to severe internal heat!"

"Granted. Volcanoes do indeed point to internal heat *near the surface*. Has

it ever occurred to you that heat might very easily be generated by purely local mechanical or chemical reactions without relation to a reservoir of central internal heat?"

"I had never thought of that," I admitted.

"I daresay. Explain then, if you can, the intermittent action of volcanoes. If they are eruptions from an internal reservoir of molten rock, why do they erupt occasionally with great violence and then lie quiescent, often for centuries? If they are caused by a gradual and continual shrinking of the earth's surface, why is not the rate of flow slow but constant once the retaining outer skin has been punctured?"

I decided to try another tack.

"How about earthquakes?" I asked. "They are surely evidence that the crust is shrinking—and how could it shrink except by cooling?"

"How could cooling of the surface produce an earthquake?" he demanded. "Have you ever seen a sphere of hot material cool?"

"Yes."

"Did the outer skin quiver and open cracks in it?"

"I have seen that happen."

"Under what conditions?"

"When the material was suddenly quenched."

"Agreed, but in what medium was the earth quenched when it was molten?"

"In air."

"The thin air film surrounding the earth could have no quenching effect on such a mass. The very idea is absurd. Now let me ask you another question. Have you ever seen a sphere of material swell from internal pressure?"

I thought for a moment. "Yes," I replied. "I have seen a lead sphere swell and burst under internal hydraulic pressure."

"And was not the bursting marked by the trembling and giving of the outer skin with consequent opening of cracks before the sphere gave way? In other words, by phenomena resembling those of an earthquake on a miniature scale?"

I was forced to admit that such was the fact.

"Then what further proof do you wish me to adduce to prove that the outer skin of the earth is not shrinking but instead that the center is swelling?"

"I admit that your reasoning sounds logical. But of what is the center composed and why should it swell?"

"I am much relieved to have your approval," he said with a return to the sarcastic manner he had momentarily lost. "It is barely possible that an idea

Mystery of the Earth

PERHAPS the greatest mystery facing man outside of the secret of life is the Earth itself. Mount Palomar and other telescopes have brought us a lot closer to the stars than any seismograph or drilling machinery has taken us into the 7,800-mile diameter upon which every one of us walks.

What lies at the center of the Earth? It is a subject for boundless speculation. Already, in this magazine, Edmond Hamilton and Noel Loomis have dreamed up subterranean civilizations—in *The Hidden World* and *In Caverns Below* respectively. Before them whole schools of authors, from Symmes to Verne to Conan Doyle to Burroughs, have conjured up fascinating fictional theories on the subject.

Now, via the sardonic Professor Hurlburt, scientist-iconoclast extraordinary, Captain Meek comes up with a theory of his own—and one which differs as much from the concentric globes of Captain Symmes as it does from Professor Challenger's organic entity.

—THE EDITOR.

can find lodging in your skull cavity."

"I did not come here to be bullied and insulted," I said hotly. "I came here to ask a favor in a gentlemanly manner and I expected to receive a civil answer, even if an unfavorable one."

My sudden flareup seemed to amuse the professor. "Sit down," he said, "I have a piece of advice for you."

FEELING sheepish, I resumed my seat. After all, he was Alice's father.

"What is the advice?" I asked.

"Keep your temper," he replied.

I nearly lost it at that remark but I managed to restrain myself.

"I will answer your questions," he said when I settled back into my seat. "First, as to the composition of the center of the earth. I don't know and neither I nor any one else will ever know until borings are made and samples taken. I am confident, however, that when this is done, that it will be found to be composed of water-soluble salts."

"What proof can you bring forward of that?"

"None whatever. I have no more proof for my theory than the solemn asses have for theirs when they tell us that the interior of the earth is a seething mass of molten material."

"Why do you think that it is composed of water-soluble salts?"

"Because that is the only theory which the mind of mankind has ever propounded that begins to explain in any logical way the observed phenomena. In the absence of accurate scientific data, we must proceed by a process of philosophical reasoning from the point where our data leaves off.

"To answer the second question. The reason why the core of the earth is swelling is that the salts which compose it are gradually going into solution. With the constant influx of water into the mass, a process which has gone on since the world existed, the mass is liquefying and growing larger. I have data at hand which tends to make me believe that this process is now approaching a critical stage.

"The skin holding the mass of water-impregnated salt is stretching toward its bursting point. Had the skin not been supported by the rock surface of the earth, it would have given away long ago. When it does give way, it will probably blow the earth into fragments."

"Why so? Water-soluble salts are not as a rule highly explosive. Even if they were, if your theory of the coolness of the interior is a fact, how did they become ignited?"

"I did not say that the interior was *cool*, I said that it was *cold*. It is bitterly cold, so cold that the water near it is frozen and only by very gradual melting is a small portion allowed to enter the mass. Were the interior warm enough to permit a rapid diffusion of the available water through the mass, the world would not last an hour."

"I still do not understand what the force is which threatens to disrupt the planet."

"It is osmotic pressure."

"And what is that?"

"Is it possible?" cried the Professor in genuine surprise. "Is it possible that a man can go through one of the institutions which we call a university today and rise to some eminence in a profession and be so densely ignorant of the simplest physical laws.

"Sit down," he went on as I started to rise, "I had no intention of insulting. I will try to explain in words so simple that even the limited mentality of a publicity agent, as I believe you call yourself, can grasp it. Do you know what is meant by a semi-permeable membrane?"

"I do not," I replied.

"A semi-permeable membrane is a skin of substance through which the solvent of a solution can pass but through which the solute or dissolved substance either cannot pass or can pass only with great difficulty. Assume for example, that we have a bag composed of such a membrane which is permeable to water but not to salt. If we fill this bag with a solution of salt in water, in the course of time the water will pass through the

membrane and evaporate, leaving the salt behind in a dry condition.

"If the bag of dry salt be then immersed in pure water, the water will pass through the membrane and restore the original condition of a salt solution in the bag. The solute will then begin to exert what is called osmotic pressure on the membrane and if the membrane be not sufficiently elastic or sufficiently strong to resist this pressure it will burst."

"Do such membranes really exist?"

"Certainly such membranes exist. The phenomenon of osmosis, as it is called, was first studied in eighteen hundred seventy-seven by Pfeffer, a botonist, who used certain plant cells for the purpose. The cell content included a liquid containing various salts in solution and a protoplasmic layer which was not attached to the cell wall. This protoplasmic layer acted as a semi-permeable membrane.

"When such cells were immersed in a *concentrated* solution of salt the water passed from the interior of the cell *to the solution* and a shrinking of the protoplasmic layer from the wall of the cell could be observed with a microscope. On the other hand, when such cells are immersed in pure water or a very dilute solution, the water passed *into the interior of the cell* and distended the protoplasmic layer until it filled the cell.

CHAPTER II

A Tremendous Force

A MORE common example and one with which you are more familiar is the process of drying fruits and vegetables and of utilizing the dried product for the table. A grape, for example, consists of a skin which is permeable to water, filled with a solution of various salts, sugars and other substances. The skin is permeable to the dissolved substances only to a very light degree.

"If we treat the grape in the proper manner, the water will pass through the skin and be lost by evaporation and the result is what we call a raisin. When we immerse a raisin in water the water passes through the skin into the interior and the raisin swells and resumes its original characteristics. Do you follow me?"

"Yes, but it seems to me that there is a flaw in your argument. No one would ever mistake a cooked raisin for a fresh grape. It never swells to the same extent."

"No, for the dual reason that the skin is not a perfect semi-permeable membrane and that certain chemical changes occur which prevent the raisin from ever resuming exactly the characteristics of a fresh fruit.

"Let us shake a concentrated solution of calcium nitrate with a small amount of pure phenol, or carbonic acid, so as to saturate the nitrate solution with phenol. This mixture we will pour into a tall narrow cylinder, like a glass graduate. The excess phenol will rise and float on the surface of the nitrate soluiton and can be readily distinguished from it by the brownish orange color of the phenol.

"Now let us introduce distilled water, also saturated with phenol, cautiously into the cylinder by pouring it down a stirring rod held against the side of the graduate. Due to the differences in specific gravity, the water solution of phenol will float on top, giving three distinct layers.

"The water on both sides of the phenol layer is soluble in phenol and so, by dissolving in the phenol from one side and passing out the other, can traverse the layer. The calcium nitrate, however, cannot traverse the phenol in which it is not soluable. Here we have a perfect semi-permeable membrane.

"If we mark the position of the phenol layer and set the apparatus aside, it will be found that the water gradually passes through the phenol layer, diluting the calcium nitrate solution and the phenol layer will gradually rise until in time it surmounts all the rest of the

liquid. In other words, the osmotic pressure of the dissolved calcium nitrate has pushed the phenol layer up to the top of the cylinder. This proves the existence of a real force which is pressing against the membrane."

"Such a force must be very slight," I remarked.

"On the contrary, the force is tremendous. In nineteen five Morse and Frazer made some measurements on the osmotic pressures of cane sugar. In a solution containing one mole or 342.18 grams of sugar in one thousand grams of water the recorded pressure was 24.46 atmospheres or about three hundred fifty pounds per square inch.*

"While the total internal pressure on a one-inch sphere would be only about eleven hundred pounds, in the case of a sphere with a diameter of one thousand inches it would be about one billion one hundred million pounds.

"In the case of a sphere with a diameter of some seven thousand eight hundred miles, as is the case with the earth, the total pressure would rise to a figure of two hundred and fifty-five quintillion pounds."

I EXCLAIMED, "Such figures as those seem to me to prove the falsity of your hypothesis. It is inconceivable that any membrane such as you suggest could withstand for a moment such a pressure as you have named."

"No such pressure exists," he replied. "The figures which I gave were for a strong solution of cane sugar. If we use common salt as the basis for our calculations we get smaller figures, due to the smaller solubility of salt in water, but still large enough to disrupt any membrane that the mind of man can picture.

"The reason why no pressure has yet developed large enough to disrupt the planet can be explained by the fact that the membrane is conceivably quite thick and probably resistant to permeation by water. When we add to this the fact that the water must seep through perhaps fifty to one hundred miles of rock before it can reach the membrane it will be seen that the amount of water available for solution at any one time must be very small.

"Let us revert for a moment to the obsolete theory with which you first confronted me—the fact that the gradual cooling of the surface of the earth observed during the ages has been distorted to prove that the center mass is cooling off. They forget that the only means of cooling would be through the conduction of the heat through the crust and its radiation from the surface so that any acceleration of the cooling would be reflected in hotter temperatures near the surface rather than cooler.

"The actual facts in the case, I feel certain, are these—the core of the earth is gradually absorbing heat so that, instead of heat going from the center to the surface and being radiated off, it is going from the surface to the center and being lost in the endothermal reaction of solution. This accounts logically for the observed phenomena."

"The theory seems to explain the facts," I admitted. "You said earlier that you had data which led you to believe that this membrane was strained almost to the breaking point. Would you mind telling me what the facts are that lead you to this conclusion?"

"The great increase in the number of earth tremors which have been recorded within the last decade," he said. "The amount of seismic activity is increasing in almost geometrical progression."

"There hasn't been a bad earthquake in the last ten years," I objected.

"Naturally a man in your profession would say that," he replied with a snort. "You measure the intensity of a seismic disturbance by the number of lives lost and the number of dollars worth of property destroyed. I grant that there has been no earthquake lately which has resulted in a heavy loss of life.

"But where, only a generation ago, seismic disturbances were recorded only occasionally, today they are almost continuous. Most of them are slight but

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*(Amer. Chem. Jour., July, 1905.)

that, I believe, is because the membrane and its supporting rock wall have been stretched almost to their elastic limit and they can give no more. Thus a pressure is buiiding which will gradually increase until the limit of endurance of the rock skin has been reached and then will come an explosion which will shatter the globe into fragments."

His reasoning sounded logical and his immense earnestness impressed me in spite of myself. I was, and am, no scientist, but Hurlburt's name was one to conjure with in the scientific world.

"If you feel that such a calamity is pending," I ventured, "why not take some steps to prevent it. Is there no way to stop it?"

"There is," he replied, "and I should think that even your limited scientific intelligence would at once see it. If you have a sphere with an internal pressure which is sufficient to threaten its integrity, how would you proceed to relieve this pressure?"

"By removing some of the contents."

"Exactly. If this skin, this semi-permeable layer which must exist as a continuous film around the entire interior of the earth were to be punctured so that the pressure could force the solution out through the hole thus formed, the danger would be over."

"Why not place your proposition before the governments of the world and have such a hole made?" I asked.

He snorted in disgust. "I have placed my theory and my data before every scientific body of any repute or prominence in the world," he answered, "and I have been laughed at. Not one of them would condescend to even appoint a committee to examine into it.

"For a time I considered letting them reap the reward of their folly, but I realized that the catastrophe which I am sure is on its way will react not only on the learned fools who compose these bodies, but also on the great mass of humanity who have had no opportunity to pass judgment. Consequently, I have decided to ignore the slights which have been put upon my mentality and appeal direct to the general public for the funds needed to make my bore. Directing such campaigns is your business and that is why I sent for you."

I had become so engrossed in the immensity of the idea that I had for a moment forgotten that I had come to see him on a very different errand. His next words recalled this fact to me.

"You said when you came in, Lawrence, that you had a favor to ask of me. I will be very glad, as a preliminary to further arrangements, to grant it if it is within my power. Kindly name it."

There was no time for finesse. "I want your permission to marry Alice," I said.

I had expected an outburst but I was agreeably disappointed. "I can see no great objection to it," he said. "To be sure, your mentality is far below hers, but on the other hand, that may be an advantage. You will hardly be in a position to argue with her and so there should be little friction between you.

"You have done well in your chosen field of endeavor," he went on, "and your request comes at a time when I need the wholehearted aid of a man skilled in publicity to help me. If you will sever your present connections and put your time and talents at my disposal for the campaign I have mentioned, I will consent to your marriage with Alice as soon as success crowns your efforts. If you fail, I cannot consent to this marriage. Do you agree to those terms?"

I was on my feet in an instant. "I agree gladly. I would do anything to win Alice and even without that incentive, I would help you. I am with you heart and soul."

"Splendid!" he cried as he grasped my outstretched hand. "Stay to dinner and we'll go over our preliminary plans tonight."

CHAPTER III

Preliminary Plans

MOST of my readers are familiar with the advertising campaign I launched in the fall. It was a success

from the start. I waited until a dull period came in the world's news and then broke forth with full page advertisements in the leading New York papers. The sheer audacity of the thing claimed immediate public attention and the prominence of Professor Hurlburt's name made the thing *News*, with a Capital N.

The Professor had a few thousand dollars with which we financed the preliminary advertisements and they quickly produced enough contributions to enable me to extend the scope of my campaign.

Fortunately our whole idea was ridiculed and bitterly attacked by all of the learned societies, thus arousing sympathy for us in the midst of the laity and getting us a lot of free advertising in the news columns. In fact, for some time we almost monopolized the front pages of the world's press.

When contributions began to lag, I announced that we would issue a "share" in the enterprise to everyone contributing one hundred dollars or more. As I pointed out, if Professor Hurlburt was right, the owner of such a share would win eternal distinction as one of the farseeing persons who had saved the world from destruction, while if his opponents were right in their theory of intense internal heat we would tap at less than the fifty miles we expected to go down, an inexhaustible source of energy and power which would make the holders of our "stock" rich.

The depth to which we proposed to drill aroused another fierce controversy from those denying our ability to go beyond a few miles. This threw a momentary damper on the enthusiasm but I revived it by announcing that we had engaged no less a person than John Callahan to superintend our drilling at a retainer of one hundred thousand dollars.

The fee included the sole rights, for a period of five years, to the newly invented Callahan rock drill which on test had drilled a twelve-inch hole into granite at the rate of sixty feet an hour.

The final push which sent us over the top was the approval of the British government. Unemployment in the mines of Wales was unusually acute that year and the Labor Government in office saw a chance to have some of their idle men put to work. They endorsed our plan, agreed to aid us in the political and diplomatic phases of our work, granted us an outright subsidy of two million pounds and an additional subsidy of two shillings a day for every British miner whom we employed.

While I was engaged in handling the publicity and financial end of the enterprise, Callahan and the Professor were engaged in making surveys to decide on the site of our operations. I had thought that the character of the rock through which we would have to drill would be the deciding factor, but to my surprise neither the Professor nor Callahan was inclined to take that into consideration.

"The Callahan drill will go through any kind of rock and enough high explosive will pulverize anything. The air pressure at the lower levels will be something to contend with, even if internal heat doesn't develope. Also we must figure on ventilation. Pick out the place where the skin you want to pierce is thinnest."

"I agree with you," replied the Professor. "After all, we cannot tell anything by the rock which we find a few hundreds of yards from the surface. I have a strong idea that once we get below the outer skin we will find the rock everywhere pretty much the same. The thing to do is to study the seismic charts of the earth and pick out the place where the drilling will be at a minimum depth."

"That would be likely to be in the vicinity of an active volcano, would it not?" I asked.

"Certainly not!" replied the Professor with asperity. "Where the skin is thin, the heat would naturally be abstracted from the surface more quickly and no volcano would be probable. Anyway, the task of drilling through the molten lava would be a little greater than even Mr. Callahan would like to undertake."

FINALLY chosen by the Professor was a spot on the edge of the Gobi desert, not far from the hamlet of Ulan, just over the edge of the Great Khingan Mountains from Peiping. He thought that a somewhat shallower drill could be made if we penetrated inland over the Gobi some three hundred miles near Chederkoo, but Callahan demurred. The problem of transport was bad enough without adding the burden of three hundred miles of truck transport over the roadless Gobi.

The disturbed political condition of China caused us some worry but the difficulties which confronted us were smoothed away as if by magic by the British Ambassador and our men were soon at work laying track from the existing railroad to the site of our work. Callahan went ahead with a force of construction men to build the road and erect our camp while the Professor and I stayed behind to wind up our affairs.

Our work was finished at last, or at any rate the major portion of it was finished and the two of us with Alice took ship at San Francisco for China and the great adventure.

John Callahan met us at Tientsin and traveled with us to Peiping, where we were met by the British Ambassador. He looked grave when he saw Alice but said nothing until after dinner.

"Surely, Professor Hurlburt," he said as we sat on the veranda smoking, "you are not planning to take your daughter into the interior?"

"Why not?" asked the Professor in surprise.

"Because of the state of the country. It would be decidedly dangerous."

"I thought that Marshal Quan had promised us his protection."

"He did, but his authority doesn't run fifty miles outside Peiping except where he has loyal troops stationed. He will see that your supplies are shipped through Peiping and as far as his troops are stationed without more than a moderate 'squeeze.' But beyond that point, arrangements will have to be made with the local leaders."

"I am very much surprised," exclaimed the Professor. "I judged from the press that the section was perfectly safe else I would have left Alice in the United States. As it is, I shall send her home at once."

Callahan and I agreed with the Professor—at that time. Alice said nothing to her father but she cornered me the next day. "Lawrence," she said abruptly, "you want to marry me, don't you?"

"Of course," I replied in bewilderment.

"Then you had better do it while you have a chance. I am ready to marry you tomorrow *but*—if you send me back to the United States alone and go on to the camp you will have to find another girl. You may be there for years and I don't intend to stay home and wait for you."

I think that I said once that Alice was inclined to obstinacy. Either I married her the next day and took her to the camp or the deal was off. There could be only one answer on my part.

"A promise is a promise, Lawrence," said the Professor when I broached the subject to him. "You have done your part and I'll give my consent—but I won't consent to her going to the camp. You come alone or you stay behind."

We were married that day.

Alice could also coax very prettily. John Callahan held out against her for two days before he capitulated, horse, foot and guns, and began to urge on the Professor the advisability of allowing her to go along. The Professor was adamant but three days later the Ambassador did an about-face. I suspected that the little minx had been talking to him, a suspicion which I later verified.

THE Professor was still doubtful but Alice's pleading and the fact that I had an undeniable right to be present carried the day. We had quite a trainload of assorted supplies to take up with us and it seemed that we would never get started but eventually we overcame the dilatoriness of the coolies, satisfied the rapacity of the officials and our special train was ready to move. It

is a splendid commentary on the railroads of China that it took us three days to cover three hundred miles of Chinese roadbed. The last seventy miles, over tracks which we had constructed, we did in three hours.

The train finally drew up at Camp Hurlburt, as Callahan told us he had named it and we detrained. Callahan had done wonders in the few months he had been over there. Where there had been nothing but the sand and rock wastes of the desert, with the mighty Khingans rising in solemn grandeur in the background, now there nestled a snug little village of wooden houses with bright flowers blooming beside many of them.

"These are the miners' homes," he explained. "My original plan, which we will adhere to, was to allot one of these houses to a family or to three bachelors. Ahead you can see the fortified compound in which are the administration buildings, the magazines, storehouses, your quarters and the machinery. Inside the compound is where we will drill."

The road was barred by a huge stone wall castellated on top. From embrasures the muzzles of field pieces protruded while my eye was caught by the sparkle of the bright work of machine-guns.

We drove through a gate and found ourselves confronted by a massive stone building.

"You look ready for a siege," I remarked.

"We are," he said grimly. "So far he have had no trouble and I have been able to square most of the local leaders but I am taking no chances. Our men are well-drilled and are divided into gun crews and I think, with our fortifications, that we could stand off ten thousand tribesmen easily, provided they have no heavy artillery."

Professor Hurlburt looked at Alice rather anxiously but said nothing.

"This is the site of the big hole," went on Callahan as we passed behind the headquarters building. He pointed out an area that was marked off by small white flags.

"It looks smaller than I expected," I remarked.

"IT IS a good deal larger than it will be when we get through the top soil," he replied. "Once we scoop away the loose stuff I do not intend to slope the hole at all but to go straight down. The hole will be a hundred yards square to start. I can't go over a thousand feet economically on one lift.

"There we will establish a relay lifting station with power, ventilation, lifts, a shift station for our bucket conveyors and so forth on an area eighty yards long by fifty yards wide in the northeast corner. The rest of the hole will be sunk another thousand feet.

"Then another relay station will be set up similar to the first except that it will be in the southeast corner. The third relay station will be in the northeast corner under the first one, the fourth in the southeast corner under the second and so on down. As a result, we will have a hole one hundred yards by fifty yards wide sunk straight down into the earth while another space of equal size will be partially dug and occupied by our relay stations."

"Very ingenious," commented the Professor. "I knew that you would have to establish such stations but I had a vision of starting a hole half a mile or more square and staggering it down like a flight of steps."

"It would have to be a good deal more than half a mile square to go down fifty miles with a step formation," laughed Callahan. "No, Professor, by the method I have outlined we will reduce the amount of digging. Now I will take you to your quarters."

"When will actual work start?" inquired the Professor.

"At any time you wish. Some of the men will have to be used for construction work for a few months yet but most of them are available now for actual digging."

Professor Hurlburt smiled like a pleased schoolboy. "If you have everything in readiness we will start in the morning."

CHAPTER IV

To Work!

WHEN work was actually started the next morning there was a spectacle which I will never forget. Our white miners stood bareheaded in serried ranks while the professor, incongruous in his palm beach suit and panama hat, strode to the edge of the space marked off for excavation.

Several hundred of the wild nomads of the desert, attracted by the report that the white men were about to start work, sat around on their shaggy little ponies behind the miners, ready for instant flight should danger threaten. Before the Professor stood the microphone of our broadcasting station ready to carry to our supporters all over the world the news that the stupendous task had been actually begun.

Professor Hurlburt grasped the shovel and bent forward. He paused as it touched the ground and straightened up and spoke.

"Gentlemen," he said simply, "Let us pray."

I never knew that Professor Hurlburt was a religious man but no prayer that I have ever heard had half the dignity and impressiveness of the few simple words spoken by that man who had risked his reputation and had sunk the scanty savings of a lifetime of scientific research in an attempt to save the world from a peril which he felt was threatening. He finished his prayer and rose.

"And now," he cried in ringing tones, "to work!"

His shovel dug into the sand and a shovelful went whirling away. A gun on the wall roared a salute and the huge steam shovels clanked and started moving the sands of the Gobi away to uncover the bedrock through which we were to drill for such a distance.

John Callahan knew his business and the shaft went down with what seemed to me almost miraculous speed. Callahan had chosen the highest point in the neighborhood for his work. I had been surprised when I first noticed this but when we started to take out thousands of cubic yards of rock, the reason became evident.

The conveyers dumped their loads into carts which ran by gravity down a track to a point nearly five miles from the camp. There they were dumped and switched onto the return track, where small electric engines towed them back to the edge of the shaft for another load.

When the shaft was down the first thousand feet there was a pause for a few days while the engineers lowered the relay machinery into the hole and set it up. Soon their task was done and the blasts again shattered the stillness of the desert and the shaft went deeper and deeper into the interior of the earth.

After the first few levels had been penetrated it became impossible to use TNT or any other common explosive. The task of driving out the nitric oxide fumes was too great to permit the use of any nitrogen-carrying explosive. Its use also made it imperative that all men be removed from the shaft clear to the surface of the ground before a shot was fired.

When they had to rise several miles, fire their charges, wait for the ventilators to clear the shaft and then descend again, most of the working time became a dead loss. I wondered what Callahan would do but this to him was only one of the minor problems with which he was confronted.

"It is quite simple," he told me when I asked him how he would go about it. "TNT is cheap and powerful and so is nitroglycerine. Both of them are excellent explosives for shallow shaft work. But I have another which is more powerful and which leaves no fumes to contend with. It is blue gas."

I expressed my ignorance and he went on.

"Blue gas is a mixture of two parts of hydrogen to one part of oxygen by

volume. Such a mixture explodes with great violence and gives as its sole product of combustion nothing but water. It is impossible to get enough of it in a gaseous state into a hole to do a great deal of damage to rock but we are going to liquefy it.

"These cylinders are arranged for using it. The larger one will be filled with liquid hydrogen, the smaller one with liquid oxygen. The two fluids are held apart while they are being lowered into the hole but by sending an electric current through this fusible plug, it is melted and the two substances allowed to intermingle. An electric spark will then ignite them and the resulting explosion will be more powerful than the charges of TNT we have been using."

DEEPER and still deeper went the shaft. By the time we had penetrated ten miles the scientists who had derided Professor Hurlburt were silenced, for *the temperature of the bottom of the shaft was sixteen degrees lower than at the surface.* This temperature steadily decreased as we went deeper and the physiographers of the world began to doubt their worn-out theories.

We had collected about sixty million dollars before we had started work but it was amazing to see how fast it was spent. However, after the first ten miles, there was no question of funds. With the shattering of their old theories of the composition of the world humanity knew not what to believe and they turned to Hurlburt as their new scientific Messiah. The governments placed unlimited credits at our disposal and the work was pushed ahead with new vigor.

Six years passed. At the end of that time we had gone to a depth of over thirty miles. The temperature of the bottom of the shaft was below the freezing point of pure water and almost at the freezing point of the brine which we encountered from time to time at the lower levels. The presence of this brine was, to the Professor, additional proof of the correctness of his theory.

He explained that the semi-permeable membrane which we were striving to pierce was probably not a perfect one and that it allowed some of the salts to seep through it, accounting for the briny condition of the water at the lower levels. The fact that the brine was getting more heavily impregnated with salt as we went lower was also proof that we were nearing the end of our work.

The years had not been altogether quiet ones. Twice we were attacked by tribesmen and once by regular troops under the Cantonese leader, Marshal T'Chung. Several times supply trains were cut off and destroyed. Our artillery and machine-gun fire soon repulsed the attacks of the tribesmen, but when the Cantonese attacked, we were beleaguered for a week and it was only by a movement of loyal troops that the siege was ended.

On the day that we completed our one hundred and sixty-second level, a little over thirty-one miles underground, a conference assembled in the headquarters building to discuss further plans.

"I am afraid, Professor, that we have gone almost to the limit of our drilling," said Callahan. "The air pressure is so great at the bottom of the shaft that our men can stand very little of it. As you know, I have cut the working shift down to four hours and work them alternate days only. We may be able to go two or three miles lower, but there we will have to stop."

"Fortunately," replied the Professor, "we have only a short distance left to to go. From the measurements which have been checked by Doctor Darby of the Washington Bureau of Standards, I am confident that the membrane lies not more than a mile and probably not more than a thousand yards below our present level.

"There are only two things that worry me. The first of these is the alarming increase in seismic activity recorded all over the world. This indicates that the time of bursting is almost at hand. The other thing is that our rate of drilling has slowed down so much. There is need for the utmost speed."

"There is one thing that worries me

more than either of the two things you have mentioned, Professor," I interrupted, "and that is the political situation in China."

"That is nothing to worry about," said the Professor testily.

"I wish that I could think so," I said gravely, "but it has me worried. I am mighty glad that Alice and the boy are safe in the States and I wish that the rest of the women were out of here as well."

"Nonsense," replied the Professor. "There has been some fighting but that is nothing uncommon. It will blow over in a few days."

"Peiping fell this morning," I answered, hoping to surprise him.

"What of it?" he retorted. "Marshal Quan has lost the capital twice before since we have been working here but he has retaken it both times. At worst it will mean only a temporary interruption of our lines of supply. We are provisioned for six months and have enough oil stored to keep us going even longer, haven't we?"

CALLAHAN nodded. "This is a little more serious than the previous squabbles," I said. "Each time that Quan has been forced out of Peiping he has been between us and the city and has been able to continue his protection. This time he has been driven out toward the sea and there is no one between us and the Cantonese."

"How much have we been paying Quan?" asked Callahan.

"Two million a year in subsidies," I answered, "and the 'squeeze' has amounted to three or four million more. Since our money has kept him in power so long the Cantonese aren't likely to forget it."

"Won't a continuation of our payments to whoever is in power settle that?" he asked.

"I hope so. Of course, while Quan is between Tientsin and us we must pay him as well. I hope that duplicate payments to T'Chung will settle the matter but I wish that it were any one else who was in command. He is a vindictive cuss and has a long memory."

"T'Chung?" asked the Professor. "Wasn't he the one who tried to collect from us two years ago?"

"Yes," I replied. "When we refused to pay he kept us cooped up here for a week—and if Quan's troops hadn't moved in our direction, it might have gone hard with us. If he attacks again, Quan is not in a position to come to our rescue."

"That's not so good," replied Callahan thoughtfully. "I expect that I had better take a look-see around our defenses today. We may need them in good condition and they have been rather neglected lately. I suppose that T'Chung will be putting the screws on us soon. Wouldn't it be wise to beat him to it?"

"I have already congratulated him in the name of the camp," I answered, "and have told him that the subsidies formerly paid to Marshal Quan would be paid to him and requested his protection."

"Have you had a reply?"

"None as yet, but I could hardly expect one so soon. There is nothing to do but sit tight and wait for him to show his hand. He may take the payments and everything be lovely."

"Wouldn't it be wise to inform the United States of the affair?" asked the Professor.

"I have already told our troubles to Manila, Singapore and Tokio," I replied. "I have been promised aid from each place if it turns out to be necessary, but what good does that do? The United States has less than a division available."

"All right," replied Callahan. "I'll go over the military supplies and make sure that everything is in good condition and then try to go on with the drilling as rapidly as I can. Do you want to take any more measurements before the next shot is fired?"

"I think not," said the Professor. "The crust is pretty thin now and it may go with any blast. You are having everyone clear out of the shaft before a blast is fired?"

"I have done that ever since we left the hundred and fifty-eighth level," re-

plied Callahan. "That is one thing that has slowed us down so much."

"Hurry the drilling all you can," said the Professor. "Of course, I cannot predict with certainty, but I believe that the whole earth will go in less than five years unless we can relieve the pressure."

When we adjourned I went directly to the radio room, hoping for a message from T'Chung. No word has been received and I left the building and joined Callahan in his tour of inspection of our defenses.

"That is our weakest point," he said, pointing toward a squat building nearly buried in the sand close to the edge of the shaft.

"That's a magazine, isn't it?" I asked.

"Yes, and it contains over thirty tons of nitro-glycerine and guncotton," he answered. "I should have disposed of it long ago but I thought we might need it and so I kept it here. It is cooled and cushioned against shocks and is pretty safe, but if a shell landed on it there is every chance that it would turn loose."

"Can't you get rid of it now?" I asked.

"I intend to," he replied. "I'll start a gang loading it on to dump cars in the morning and haul it down to the rock dump and detonate it. It isn't safe to have it around if we are attacked with artillery."

A radio messenger hurried up and handed me a dispatch which had just been received. I read it and passed it on to Callahan without a word. He read it and whistled softly.

"The old boy doesn't sound very cordial, does he?" he commented.

"Not very," I replied as I reread the message. T'Chung demanded three things—first a cash payment of twenty million in gold within three days—second, a subsidy of a million and a half gold per month—and third, an impost duty of one hundred percent *ad valorem* on all imports, based on his valuation. Failure to promptly acquiesce in his terms he informed us, would mean that he would at once confiscate our entire goods, take charge of the work we were doing and expel us from the country.

"Of course we can't meet those terms," said Callahan.

"He doesn't expect us to," I replied. "I'll send him back a message in which I will offer a million cash payment in ninety days and a subsidy of a hundred thousand a month. That will be a basis for bargaining."

"In the meantime I'll start the men moving that soup," exclaimed Callahan as I started for the radio room. "I want to take it in small amounts and it will take some time to handle it all."

IN the radio room I composed my message to the Cantonese leader, adding to my proffered terms a suggestion that a commission be appointed to arbitrate the matter. I handed the message to the operator and he depressed his sounding key and called Peiping. Suddenly there came a terrific explosion from the outside which shook the building. With an exclamation I rushed out to the compound.

The miners off shift were hurrying through the gate into the compound, rifles in hand, ready for what might befall. On the wall above I saw gun crews ripping the breech covers hastily off the field pieces.

Overhead the alarm siren wailed. I raced up the steps to the lookout tower. There I found Callahan, binoculars in hand.

"What is it, John?" I demanded.

"An attack, I guess," he replied. "I'm not sure whether it's that or an accident. I had a dump car loaded with soup and started it on the down grade toward the dump with two men on it to handle the brakes. They were to unload when they got there, set a fuse for ten minutes and come back. The car let go about six hundred yards from here, where you see the track torn up. I don't see anyone moving out there."

I took another pair of glasses from the rack and searched with him. Not a thing rewarded my search.

"I don't like to send men down there to investigate," said Callahan, "when there is a chance that it is an attack."

An engineer ran up the steps. "The

petroleum has stopped flowing, Mr. Callahan," he reported. "The pumps are just sucking air."

"That settles it," said Callahan grimly. "That car was shot at. We had better be sure that everyone is in and then stand by for an attack."

There was no attack that night nor the next day, nor yet the day after. We tried sending out scouts, but they were fired on a few hundred yards from the wall and scurried back, fortunately with no casualties. We were thoroughly blockaded and isolated from the outside world. Work on the shaft was of course abandoned and every man brought to the surface to aid in the defense.

On the third day we received a reply from Marshal T'Chung. He made no allusion to the message which I had sent him other than to state that he thought I had misunderstood him. He repeated his former demands and reminded us that the three days he had allowed for the initial cash payment were up at midnight."

"We couldn't pay him by midnight even if we were willing to," objected the Professor.

"He has no idea that we will pay him," I replied. "He is merely looking for an excuse to attack us. He has not forgiven us for the thrashing we gave him two years ago. Besides, like a good many bandits, he thinks we are mining gold here and getting rich."

"Have you sent for help?" demanded Callahan.

"Of course," I answered, "but sending is all that it amounts to. With T'Chung entrenched between us and the sea it will take weeks for the nearest force to reach us. We will have to play a lone hand, I am afraid."

"How soon do you think he will attack?" asked Callahan.

"The tribesmen may be sniping at us any time now but it will be a week or ten days at the earliest before he can get troops here," I answered.

"Then I'll start the shovels to work in the morning, covering up that soup magazine with sand," replied Callahan. "That's the thing that I am most worried about."

The next morning the steam shovels started their task of throwing sand over the nitroglycerine magazine. For an hour they worked without interruption and then came a call from the sentry in the lookout tower. Callahan and I hastened up and we found that my guess as to the time of T'Chung's attack had been very faulty. The Marshal must have started his troops from Peiping as soon as he sent the first message for coming along our track from Ulan was a train of flatcars. It did not require the glasses to determine that they were loaded with artillery. The train stopped several miles from our camp, out of range of the seventy-fives which were the heaviest guns which we had, and started to unload.

"Those guns are four-point-seven's or I miss my guess," said Callahan as he studied the operations through his glasses.

"There is at least one battery of six inch," I replied.

He whistled sharply. "Apparently T'Chung means business," he remarked. "I reckon that we had better try to arbitrate a little."

CHAPTER V

Unconditional Surrender

AS he spoke a power car detached itself from the Cantonese camp and rolled down the tracks approaching our camp. It bore a white flag and Callahan, the Professor and I went out to parley. When the car arrived an obese General accompanied by an aide dismounted and came forward to meet us.

The general dispensed with the formalities and compliments which usually hedge around a Chinese conference and got down to business with a dispatch which would have done credit to a Maine Yankee.

"Marshal T'Chung demands an immediate and unconditional surrender," he

announced, "and delivery to me, as his representative, of all of the treasure which you have amassed. All of your machinery and arms must be delivered intact with the treasure."

"What are the terms offered for our surrender?" I asked.

"I offer no terms," he replied. "You are entirely at my mercy. You three will be taken as prisoners to Peiping in irons, to answer to Marshal T'Chung for defying him two years ago. Your women will be sold to my officers and your men will be stripped of arms, food, water and shoes and turned loose to find their way to their homes."

"That means death for all of us except the women and worse than death for them," I replied.

"Unless you surrender at once I will start bombarding as soon as my guns are emplaced," he replied. "In that case, every man who is captured will be put to death by torture and your women will be stripped naked and turned loose in our camp for the sport of the common soldiers. I must have an immediate answer."

"Give us an hour to consider the matter," I replied.

"I will give you one minute," he said.

"In that case," said Callahan hotly, "I will give you just ten seconds to get out of range before I start shooting."

He drew an automatic pistol from his pocket and cocked it, his eye on his watch. The General paled and then turned and ran at full speed for his waiting car. Callahan kept his eye on his watch for ten seconds and then very deliberately raised his pistol and took aim. I grasped his hand just as the gun went off and the bullet flew wild.

"Why didn't you let me scrag the devil?" he demanded, turning on me furiously. "If I had bumped him off it might have delayed matters a little."

"Lawrence was right," said the Professor. "The question now is what are we to do?"

"Hustle back under cover," said Callahan shortly. "We'll have a lot of high 'ex' about our ears soon or I am badly mistaken."

Callahan was not mistaken. Within thirty minutes of our interview the first shell was fired from the Cantonese camp. It screamed overhead and exploded half a mile beyond the compound. The next shot was closer and the third landed full in the compound, doing no damage. Our seventy-fives were raised to their maximum elevation and fired but our shells fell a mile short of the nearest enemy gun.

"Better send the women and everyone except those needed to guard against surprise down the shaft to the first level," said Callahan to me as we watched the course of the bombardment. "It is only by chance that a shell will fall in the hole and it will detonate against the side if it does."

"If it struck the side fragments of rock would be thrown all over the shaft," I pointed out.

"You're right," he said. "This is probably as safe a place as any. We might try a counter-attack but I don't think it would do a great deal of good."

"All the same I'm in favor of trying it," I answered. "This business of sitting here waiting for a shell to come over with your name on it is worse than advancing under fire."

"I'm not worried about a shell with my name on it," he replied. "The thing that I fear is a shell with the soup magazine written on it. When that comes we all go to glory on the tail of a kite."

The bombardment continued in a leisurely manner. Shell after shell struck the headquarters building and tore sections from it but the structure did not fall. As soon as the bombardment began to center on it we discussed moving the women and other non-combatants from it under the shelter of the stone wall but decided to leave them for the time being in a room on the ground floor opposite to the side which the shells were striking.

The garrison gathered behind the wall. Besides the thick wall, some fifty feet of sand had drifted up against it on the outside and the few shells that struck it detonated in the sand, throwing huge clouds of sand into the air but

doing no damage.

By mid-afternoon, the suspense was more than I could bear. We had suffered only half a dozen casualties and were in no immediate danger of being overcome or even injured except for the ever present danger that the nitroglycerine magazine might be struck by a shell and exploded.

After consultation with Callahan I called for volunteers for an attack on the enemy guns. All of the men were eager to take part in it, anything being preferable to sitting, waiting in anxiety every minute lest a shell hit our weak point and demolish everything within our walls. Callahan advised that we wait until night. We agreed to this although the monotony and strain of waiting were so great that death seemed almost preferable if it were accompanied by action.

WHILE we were discussing the matter of postponement a six-inch shell came hurtling overhead and fell full in the shaft.

"I wish they'd all go there," I remarked to Callahan. "They do less damage there than elsewhere."

He grunted an assent and went on talking. Another shell, apparently from the same rifle, came over and fell into the pit. A third and fourth took the same route.

"That Chino is evidently satisfied with his aim," remarked Callahan.

"I hope he keeps his gun pointed there," I laughed.

"They're crumpling the edge of the shaft a good deal," he replied. "I hate to think of that rock falling on the relay stations."

"I don't see what difference that makes," I said. "I don't think we will ever work on them again."

"Probably not," he assented, "but someone else will and I don't like to have my work butchered that way."

A moan from the siren broke up our conversation and brought everyone to his feet. "What is it?" shouted Callahan to the lookout.

"It seems to be an attack," the sentry shouted. "The flatcars which carried the guns were coming down the tracks and they are loaded with men."

The crews ran to their guns while Callahan and I hastened to the lookout tower. There was no doubt that an attack in force was pending. Car after car, brown with khaki-clad humanity rolled down the tracks toward our camp.

Almost at once the guns of the Cantonese lost their lethargy and the shells began to pound the compound as rapidly as the guns could be served. A portion of the headquarters building crashed to the ground and Professor Hurlburt, who had been put in charge of the noncombatants, appeared on the scene. "Under the shelter of the wall, Professor!" shouted Callahan.

He nodded and disappeared. In a few moments the women and children appeared, ran across the compound and took shelter under the wall facing the hostile guns. Fortunately the maneuver was accomplished without anyone being struck by the shells, which were now falling in the compound by the dozen.

Just out of range of our seventy-fives the flatcars stopped. The soldiers swarmed off and arranged themselves in a thin skirmish line and began the advance. We had plenty of ammunition, both high explosive and shrapnel, so our guns started to talk as soon as the advancing line was in range.

But one might as soon try to hit the mote in a sunbeam as to hit those specks scattered thinly over the sand of the Gobi. Once in a while a shell would make a direct hit but the losses of the attackers were no greater than ours.

A few hundred yards behind the first wave of Cantonese, another wave formed and behind them a third. Altogether. About six thousand men were moving to the attack.

Slowly but steadily the advance continued. Our machine-guns opened fire but against such scattered personnel they did little more damage than that done at longer ranges by the field guns. Presently the crackle of rifle fire was added to the drumming of the machine-guns but the Cantonese were fir-

ing too and were lying prone for the most part, advancing only by short rushes under the covering fire of the prone men.

As they came within range the second line added its fire to the fire of the front line, while the third wave rapidly closed up to firing range. Our men, who had to expose themselves in order to fire effectively, suffered heavily.

"We'll have to advance to the edge of that sand or the front wave will be in a dead space soon," Callahan shouted in my ear. "Come on, men, follow me!"

He leaped over the wall onto the loose sand and started forward. I followed at his heels. We had taken only a few steps when a four-point-seven shell struck the sand before us and exploded. By some sort of a miracle neither of us was hit but we were thrown clear back over the wall into the compound. I struggled to my feet but Callahan strove unsuccessfully to rise.

"Hit, John?" I asked.

"No, but I think my leg is broken," he answered. "Don't stop to fuss with me. Go ahead and take charge of the men!"

I bent over him and tried to lift him but as I did so I saw something that made me drop him and cry out in surprise and alarm, "Look! The magazine!"

The shells which had fallen in the shaft had crumbled away the edge to such an extent that the sand which we had filled around and over the magazine had been sliding down into the bowels of the earth for some time. The magazine itself had finally been undermined and as we watched it slid slowly toward the edge of the shaft. Nearer and nearer it went until it hovered for an agonizing moment on the brink and then toppling forward it fell into that thirty mile deep hole.

With strained nerves we waited for the crash. No sound came from the hole and Callahan drew a long breath.

"It fell straight enough to clear the relay levels," he muttered. "Lord—what a crash it will make when it strikes! Leave me now and take charge of the men."

THERE was nothing that I could do for him and I climbed rapidly over the wall and hastened to the edge of the sand parapet. The first wave was within four hundred yards and a rush was evidently imminent. Presently it came. With a shout the khaki-clad figures leaped from the ground and came forward at a trot toward our defenses.

Our rifles burst into a fury of fire, mingled with the rattle of a dozen machine-guns which had been brought up to bear on the attackers. They came forward with dogged perseverance but no one could stand the withering fire we poured into them. Presently the line halted and dropped prone on the sand and opened fire on us. Under my orders all but a few of our men crawled back on the bank until they were hidden from the sight of the attackers.

Again the Cantonese line rose and moved forward, this time at a slow run, but a shout brought our men back onto the firing line and that attack crumpled within a hundred yards. Again our men retreated out of sight, but the first line of the attack was now within two hundred yards and it was evident that a few more determined advances would bring them on us and we would face a hand-to-hand conflict with an overwhelming force. The Cantonese artillery shifted its angle of fire and shells began to fall on the parapet among our men. Our casualties were mounting.

As the first shells fell among us the Cantonese gave a cheer, rose and came forward at a run. Our rifle and machine-gun fire took a heavy toll from them but they were within a hundred yards and coming strong when suddenly the whole line fell flat. As they did so I realized that the earth under me was shaking and trembling like a sea in a gale.

Giddy and seasick I tried to scramble to my feet. As I did so a roar as of all the thunder in the universe smote my ears. I thought that the end of the world, so long predicted by the Professor, had arrived. Instinctively I looked back toward the compound.

I don't know how to describe the scene that met my gaze. Imagine if you

can a solid column of water, a hundred yards wide and fifty yards through, shooting up into the air with unheard-of velocity to a height of at least a mile! Such was the sight which greeted me. As solid as rock it looked and it kept coming! The Cantonese, who were facing it, saw it before I did and as fast as terror and the surging of the land would allow them they staggered to their feet and fled.

Someone clutched my ankle and I saw that it was the Professor. His face was lighted by a beatific smile with which anxiety was strangely mingled. He was evidently trying to get some message to me but the roar of the water was so great that it drowned out his voice.

Presently I saw that he was pointing upward and then toward the compound. I looked up and understood. A strong wind was blowing high across the compound toward the Cantonese camp and the water column was inclining forward so that it stood almost directly over us. When it fell, we would be almost in the path of the deluge!

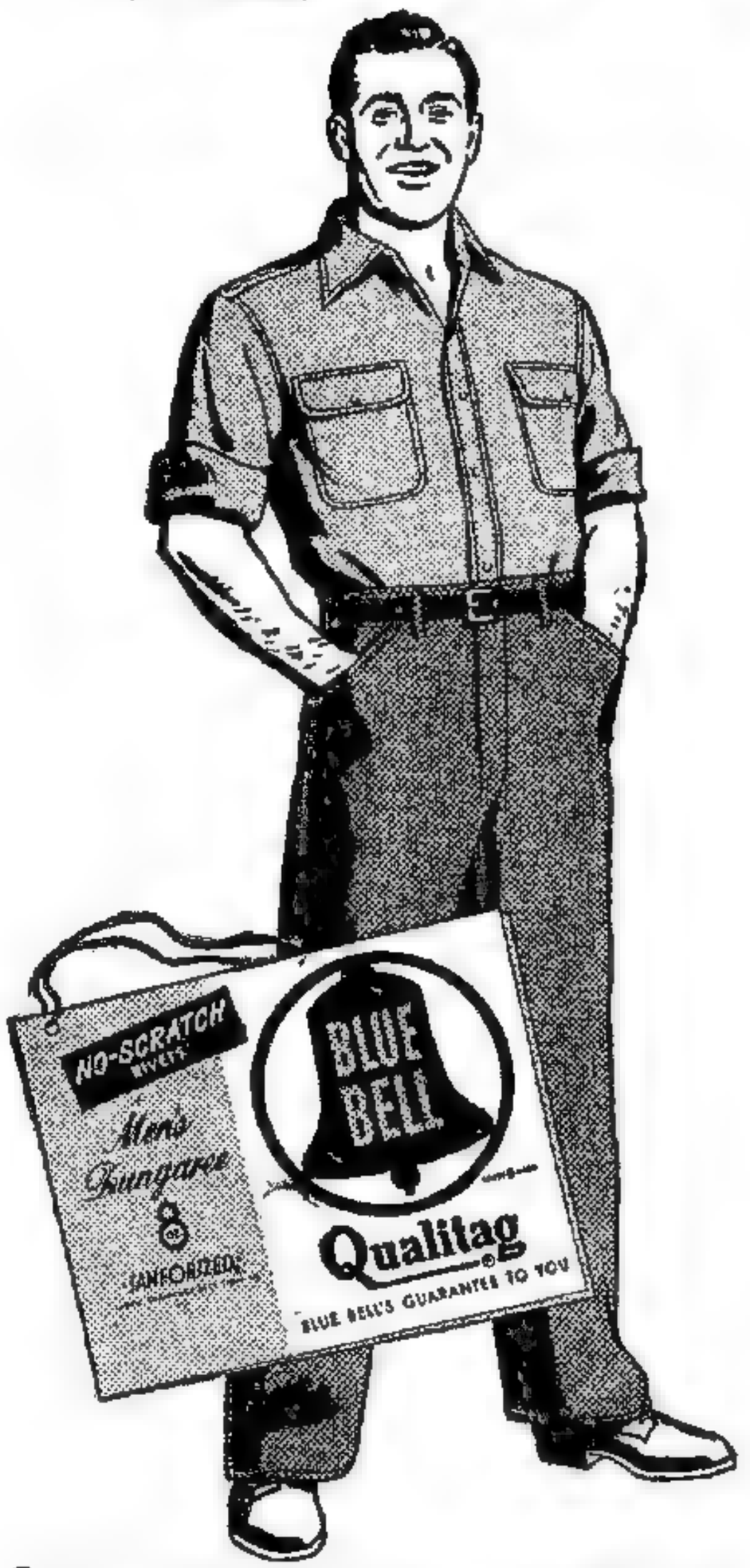
I nodded and moved along the line, shaking man after man and pointing to the compound. They soon saw their danger and crawled hastily toward the edge of the shaft, carrying the wounded with them. So high did the column rise that every one of our men was safe within the walls before the first of the water hit the ground with a crash that resounded even over the roar of the geyser.

Followed by the Professor I clambered up into the lookout tower. The wind carried the water away at such an angle that we could see the Cantonese. They were hastily trying to get their guns onto the flatcars but from the start it was evident that they were doomed.

Our camp was built on a little knoll and the railroad ran through a dip in the ground toward a pass in the Great Khingans. The Cantonese had not moved from that shallow ravine and down it was now pouring a torrent. Some of the

[*Turn page*]

How to buy better work clothes



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water seeped into the thisty sands of the Gobi as it fell but no sands could absorb a torrent of that proportion.

Like a millrace the water rushed toward the doomed camp. The attacking men were swept away and presently the wheels of the guns were in water. Then came the flood. The danger from our attackers was over for the army of Marshal T'Chung had ceased to exist.

I made my way toward the spot where I had left John Callahan. As I approached I saw that he was laboring under great excitement. I thought that it was due to the phenomenon we were witnessing but as I leaned over him he seized my head and twisted it upward. I looked and far overhead, well to one side of the great column of water, hovered three airplanes, bearing on their lower wing surfaces the welcome emblem of the United States. . . .

THREE months later we were in the Professor's suite in the Mayflower Hotel in Washington.

"Of course the giving away of the rock skin and the consequent puncturing of the membrane at such a time was fortunate in the highest degree," said the Professor, "but it hardly surprised me. I knew that the skin was getting thin and I would not have been surprised to see it go at any shot.

"You may ask why I took no precautions against a flood overwhelming us. There were none to take. We were on the highest ground in the neighborhood and any other place would have been more dangerous than the compound. By the way, Lawrence, I can now answer the question you asked me seven years ago as to the composition of the center of the earth."

"I know it as well as you do now," I smiled. "I would rather you'd tell me the composition of the membrane."

"I can't do that yet," he replied, "and I doubt if I shall ever be able to. The latest reports are that the geyser which we loosed is flowing a steady stream but is no longer spouting to a great height. Naturally the great internal pressure has disappeared and the present flow is caused by the gradual contraction of the earth's interior as the stretch which the ages placed on the rocks is disappearing and by additional dilution of the core by the gradual seepage of water through the membrane.

"I am afraid that we could never pump our hole dry and there is no other way to determine the character of the membrane unless we sink another shaft to it and take samples. Of course, if John wants to tackle another shaft I think I can raise the funds."

"Thanks," said Callahan dryly, "I have had about all of the interior of the earth that I care for. There is plenty of work to do on the surface. When you released the pressure and let the earth's interior shrink you made enough work to keep a good many engineers busy by repairing the damage.

"Before I do any work, however, I am going to take a nice long rest. I haven't had a vacation for seven years and since I have been granted an annuity of a hundred thousand a year I'm going to loaf for the next two years."

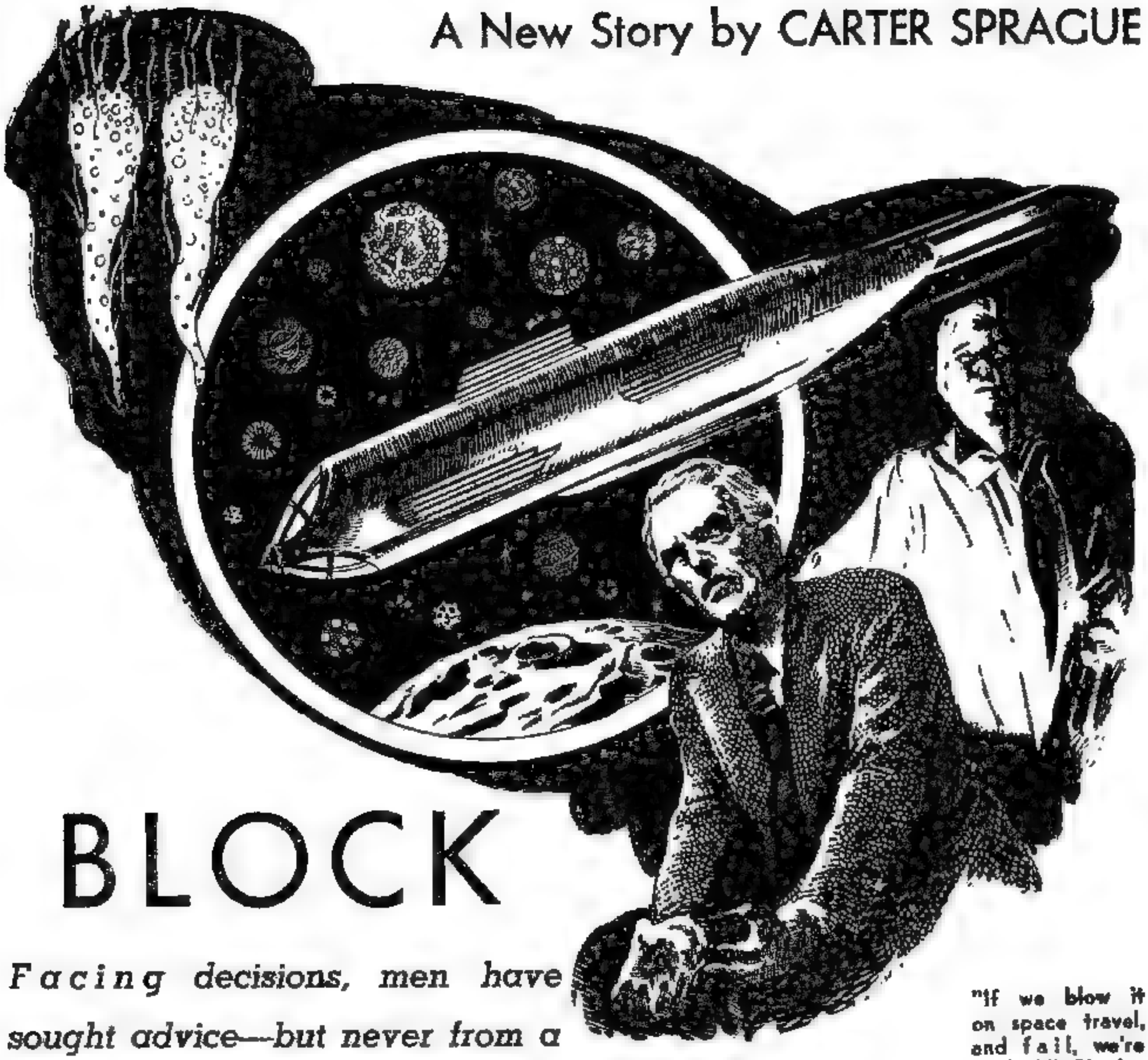
"I'm going to get back to work as soon as possible," said the Professor. "I am sick of attending banquets and receiving medals and decorations and listening to laudatory speeches from the very men who damned me completely less than a decade ago. I'm going to found a research laboratory for the investigation of all ideas which the scientific bodies pronounce foolish."

"Since your proof of the osmotic theorem, you won't find them so quick to oppose things they don't know about," I laughed. "You have taught a lesson."

"Mark my words, Lawrence, the next genius who comes forward with a revolutionary idea which runs counter to the accepted theories on which the average scientist rests his reputation will meet with as cold a reception as I did. You can force a new belief on the world without ocular demonstration. Even then some won't believe their eyes."

After thinking it over and reading some commentaries which have appeared on our work in the Gobi I believe that the Professor is right.

A New Story by CARTER SPRAGUE



BLOCK

Facing decisions, men have sought advice—but never from a stranger source than Campbell's ghost, which was no ghost!

"If we blow it on space travel, and fail, we're cooked," Cherley said

CAMPBELL came into the restaurant wearing the mantle of his deep-seated fatigue like a cloak of invisible mail. His shoulders sagged slightly under its weight and his face was old and etched in grey. He had been a very important man for a very long time and his responsibilities had increased with each passing year. He was a man close to the breaking point and he knew it.

It was his awareness that had brought him to the restaurant for the first time in a dozen years. It was not the sort of place in which those who thought they knew Douglas Campbell might have expected to find him.

He was a man who was sought out by folk of importance, men and women with large expense accounts who, because of his importance, delighted in breakfasting, lunching, dining and suppering him in places like the Plaza, the Colony, the Pump Room and Chasen's —or perhaps the Savoy, the King George Fifth of Paris or the lushest and costliest resorts of Rome, Madrid, Miami, Johannesburg, Rio or Buenos

Aires. Campbell was a very important man.

Even during the summer tourist season Gus' flyspecked little spot was definitely not a magnet for men and women with large expense accounts. Campbell found himself grinning at the thought as he laid down his tackle on a defiantly bare stained table just inside the patched screen door. He felt some of the strain leave him as he sniffed the familiar medley of stale beer, long since eaten seafood, stale tobacco and plain shore dampness.

His shoulders straightened slightly and the smile remained as he walked slowly across the uneven floor to the bar. Gus would give most of the expensive folk who called themselves Campbell's friends short shrift. He put both hands on the bar and looked down it at Gus, who was seated on his regular chair, poring over a Portland gazette, as if he had not moved in the dozen years since Campbell had last walked out of the little Maine restaurant.

Gus' hair, he noted, was still thick and reddish brown, his face rugged but apparently unmarked by the years. Campbell glanced at the cloudy mirror behind the bar and was grateful for its lack of sharpness. Gus, he decided, had the better life—at any rate it was treating him more kindly. It took Campbell a moment to raise the courage to speak. He cleared his throat loudly.

GUS looked up with a frown. For a moment he stared at Campbell, frowning slightly. Then he nodded, folded his paper neatly, laid it down on the chair as he rose and came forward behind the bar. His eyes crinkled and he leaned forward slightly.

"What'll it be, Doug?" he asked. "The usual?"

"You got my wire?" said Campbell, watching Gus select the right brand of heavy New England rum from the back bar behind and set about mixing the drink as if Campbell had last been in the night before rather than a full dozen years.

"Wouldn't have opened up tonight if I hadn't," said Gus in the soft accent that is as typically Maine Coast as the more publicized twang. "Isn't much business here after Labor Day. Usually don't open up except Friday nights and Saturdays. Like to do a spot of fishing myself. Bass is biting upriver a ways."

"Sounds swell," said Campbell and to his surprise his enthusiasm was real. He had come to Gus alone for another sort of fishing. But just picking up the old threads, finding Gus and the place the same, relieved him of more of his invisible load.

He sipped, smacked his lips, shook his head in wonderment. "I've been in a lot of places where they make a lot of things they call drinks," he told the complacent Gus, "but you're the only man in the world who knows how to mix these."

"Bill Martin down Ogunquit way claims he can make them," said Gus, swabbing the bar. "Can't." He hung up the towel, added, "How about I fix something in the kitchen? Got some stuff in the pot that's not bad. Feel like sampling it?"

"Call me when it's ready and leave a clear path to the kitchen," said Campbell. "I've been saving up for this."

"There's more mix in the shaker," Gus said over his shoulder as he began his unhurried progress toward the rear.

Campbell watched him go, using the mirror instead of turning his head. Tension was rising within him as he drained his glass and refilled it from the shaker on the bar. For a moment he rose on the balls of his feet, fighting a desire to be sick. Then he moved quickly to a table near the back and sat down. Vaguely he was conscious of Gus banging pots and pans around beyond the swinging doors that led to the kitchen.

He sat in the right chair and tilted it back a little, doing his best to recall every move. There was no knowing what was important—no knowing whether anything was important after

twelve years. He had a sudden ridiculous thought of what Gus would say if he knew that Doug Campbell had come all the way up here after all this time to ask advice of a dead man.

His eyes flickered involuntarily to the kitchen doors to make certain Gus was not peering in at him. And when he turned back—satisfied that he was alone—Charley West was sitting there, cheek on hand, elbow on table, as he had been the last time and the other three times that Campbell had talked to him since his death—if, he thought, Charley had really died.

"Hello, Doug. Long time no see." The moment Charley spoke Campbell knew he was dead. For he didn't actually speak—nor did Campbell move his lips when he replied. It was the same as words—they were there all right—but there was no need to utter them.

"I've been pretty damned busy," Campbell said in apology. He shouldn't have let Charley go so long without a visit. Not when Charley had sacrificed his life the day of that sudden squall in the bay so that Doug Campbell might go on living.

"You haven't had to call on me in a long time," said Charley. He didn't look like a ghost. He was substantial—you couldn't see the chairback or the rest of the room through him. But he wasn't there in body even though he seemed to be.

"Better get a new sports shirt," Campbell told him. "That job you're wearing went out with the twenty-nine boom." Campbell and Charley West had both been junior fops during the years they roomed together at Exover. They had gone to different colleges but had remained friends, meeting here every summer. . . .

Charley smiled and Campbell thought that there was no smile so dear to him as Charley's. "Sports shirts aren't very important where I am, Doug. What's wrong? Got a problem you can't solve?"

"You know I have," said Campbell with a wry smile. "As a matter of fact I'm on what might be called the horns of a dilemma."

"Still strong for clichés, Doug?" Charley chided him amiably. He put out a hand. "I'll do what I can but I'm not up on the pros and cons of your world any more, Doug. I may not be much use."

"How did you know I was coming here?" Campbell asked.

"We know," said Charley quietly. "Your urgency came through clearly. I wish I understood more of your problem, though. I've been away—far away—much of the time since our last meeting."

"Does time mean much to you now?" Campbell asked seriously.

CHARLEY laughed silently. "Of course," he said. "Don't you understand, yet, Doug? No one really dies. It's against the nature of the universe. We are all—well, transferred. You can take my word for it that while time may be different it still matters."

"A lot of people I know would be glad to know that." Campbell's face was old and thoughtful. "About not dying, I mean."

"I know what you mean," said Charley and if there was a hint of patronage in his tone there was sympathy there as well. He went on. "Doug, what's the nature of this problem of yours?"

"It may mean the future of the entire human race, Charley. I have to determine the placement and allocation of a fund. Either way could be wrong—either way could mean salvation." He sighed and again his cares were heavily worn. "If I make the wrong choice it could mean destruction of the world as we know it."

"You *are* in a sweat," said Charley mildly. "Well, it's the biggest one you've brought me yet. I'll do the best I can."

"That's good enough for me," said Campbell. "Charley, I've got to tell a member of the cabinet what to do by Monday when he comes back from his trip to Florida. It's my job to give him the right answer.

"Briefly, here it is—I've got to tell him whether to put three billion dol-

lars we've managed to hoard into space travel or into more relief for Europe, Asia and South America. If we blow it on space travel and fail we're cooked —dead as herring. If we succeed we may involve the world in a series of interplanetary wars that could mean the actual physical end of the world.

"If we blow it on other countries and fail we might as well resign ourselves to the same thing. If we succeed we may just be building up future enemies for our country. If we split the three billion two ways we accomplish nothing and fail all around."

Charley drummed silently on the table with fingers that weren't there. Finally he said, "You *have* drawn a lulu, Doug. But somehow I don't think you've cut down to the real meat of the issues at stake." He paused, absurdly young looking to have a man as obviously sage and seasoned as Campbell hanging on his every word.

"You've got ideas of opening up new worlds to an overcrowded Earth," Charley went on. "You have an inner vision of yourself as a sort of he-Isabella giving financial backing to a new and vastly greater Columbus. You're dreaming, not thinking, Doug."

"Then you believe—" said Campbell and there was a tremor in his unspoken words. He looked pleadingly at Charley, who was smiling faintly as he shook his head.

"Think, Doug, *think!*" said Charley. "As long as you have hungry mouths to feed on Earth you have no right to take the means of feeding them to finance a near-impossible jaunt to utterly useless planets.

"Think of children who, through no fault of their own, are not as lucky as yours. Even if you can care for only a few of them, among them may be the Messiah who can lead Earth out of its present troubles. Your percentage lies that way, not on the planets."

"I wish I could be sure," said Campbell slowly. "I wish I could be sure." He stared keenly at his companion. "You really feel that the answer lies right here on Earth?"

"I'm sure of it," said Charley simply. "Believe me, Doug, I never advised you wrongly before, did I?"

"Of course you haven't," said Campbell simply, convinced. "If it weren't for you I'd never have been able to do a tenth of what I've done so far. You've made all my big decisions for me."

"Then trust me once more," said Charley West simply. "I *know*, Doug. There is no other path for you to follow."

Campbell nodded slowly and stared, frowning, into his drink. While he hated to give up the grander dream, the dream of sending men toward the stars, he was too much the Scotsman by blood not to recognize its siren extravagance.

He had been a foolish and near-criminal egotist, he thought, letting the childish dream take possession of him and distract him from the true path of his responsibility. Had he not heeded the seductive call of space his decision would not have been difficult.

"You're right, Charley," he said softly and for the first time he spoke aloud. "There is no other way."

"You'd best leave at once, Doug," said Charley with quiet conviction. "Now that your path is clear before you you can begin clearing decks in the capital. The man you must see is coming up tomorrow instead of Monday and the wrong people may reach his ear."

CAMPBELL asked, "You're sure of that?"

"Call your Washington office," said Charley calmly, his eyes moving toward the old pay telephone on the far wall.

"I believe you, Charley," said Campbell with a wry grin. "It sort of looks as though I have to, doesn't it?"

"The choice is yours, Doug," said Charley gently. "It has always been yours. Even—ghosts—are not infallible."

"You're not a ghost, Charley," said Campbell with simple affection. He grinned and for a moment looked almost as young as his long-dead friend.

"I'll leave—now. I can drive to Boston and catch the late plane from there. Then—" He frowned, already considering the machinery which would have to be put in motion, the calls to be made, the conferences to be held, the tactics and strategy which would avail the most.

He made a motion to shake hands as he rose, then let his arm fall quickly to his side and looked slightly foolish. "That would be a bit silly the way things are now, I guess."

"I guess," said Charley, meeting his gaze serenely. For a moment their eyes were locked. Then Campbell lifted a hand in an awkward salute and turned away. As he picked up his tackle he looked back. Charley was still sitting there, regarding him with the quizzical yet friendly look that had meant so much in Campbell's life. The important man lifted his hand once more before he passed through the screen door, letting it slam shut behind him.

* * * * *

Charley no longer sat on the chair. As the door slammed shut he vanished with the suddenness of a movie image when the film snaps in two. Something quite different replaced him—something perhaps an inch in diameter, if it could be said to have a diameter—something quite indescribable in comparison with anything known on Earth. To human eyes it appeared inanimate, for the twitching of its tiny tendrils was more felt than visible in itself.

Through the square service window between kitchen and back bar flew another of the creatures. It moved through the air as swiftly as a hummingbird's wings, although it had neither wings nor any other evident means of suspension and propulsion. It hovered to a darting halt, settled slowly on the chair beside its companion. Like the other it was small and utterly indescribable.

Similar to a pair of overlarge bugs they faced one another and conversed by means of the mind images that they could toss back and forth more easily than a pair of human kids could toss ball. Their semantics were infallible as they had no need for words. The images amounted to a vastly superior substitute.

"I wonder," said the one which had appeared to Douglas Campbell as Charley White, his images flicking in rapid succession, "just what does happen to these huge bumbling creatures when they undergo the transition they call death. It must be very painful for they all fear it from their first awareness."

"Who knows?" said the one that had projected the image of Gus from the kitchen. "This Earth of theirs is full of transformations—the egg becomes the cocoon, the cocoon becomes the caterpillar, the caterpillar becomes the butterfly. It is a crazy way to exist."

"There have been oddities on our own planet," the first of the creatures said. "And after the butterfly—what? These humans are end products of such a change. Sometimes I feel a sense of what they call guilt for deceiving them so. If it weren't—"

"But it is our very existence for which we are fighting," said the other sternly. "Let them once reach our Venus"—he didn't say Venus but something very different in his image-talk—and they will set about making it livable for them. That would mean our ultimate experience of the change they call death. We should simply cease to be. We cannot exist long in their atmosphere."

"I know," the first tiny visitor reminded the other. "They may be great awkward monsters but they are always dangerous. Campbell's three billion could carry them either to Mars or Venus. We know they wouldn't like Mars. But once they penetrate our cloak of cloud we are done. Venus, the goddess of love, was not entirely an imaginative idea. Our elders had no concept of human progression."

"They should have planted thoughts that would make our home planet repulsive and deadly," said the thing from the kitchen. It too was tired. Projections

drained them of much of their life force, and rest and replenishment were needed by both. But they were a highly trained team, one of many such covering Earth against possible threats to Venus. There was still much to be done to check the deadliest peril their homeland had ever faced.

"Prepare," said the one which had been Charley West. "We must be in Washington within the hour. It is an easy flight. I'll continue my work with the cabinet member's aide, make sure he does not sway his employer in support of a planetary move."

"And I," said the other, "shall continue to work upon his astrologer. Once more, we must be doubly sure."

They took off, flying one a few inches above the other. The screen door opened in response to vibrations sent ahead of them by their fore-tendrils, just enough to let them pass through into the darkness outside. The faintest of humming sounds seemed to linger behind them, to fade like a tuning fork flicked and left to vibrate. Then at last there was only the faint buzz of an occasional fly, roaming the room or caught in one of the flypaper festoons.

GUS, hurrying toward the restaurant, saw the door's motion as the tiny aliens departed and made a mental reservation to get a new spring for it next year. There was small sense in attending to it now with the season virtually over.

His eyes were puffy and a sense of great urgency disturbed his usual tranquility of spirit. It was the first time in his life that he had fallen asleep like that, right after dinner. And with Douglas Campbell due after all these years. He looked around the barroom quickly and felt sudden relief. It was just as he had left it before going home for a shave after eating.

Then he sighted the empty shaker and the glass on the table. He scowled. That was the table Doug had always used to sit at—him and Charley West. Gus' memory wasn't playing him tricks anyway.

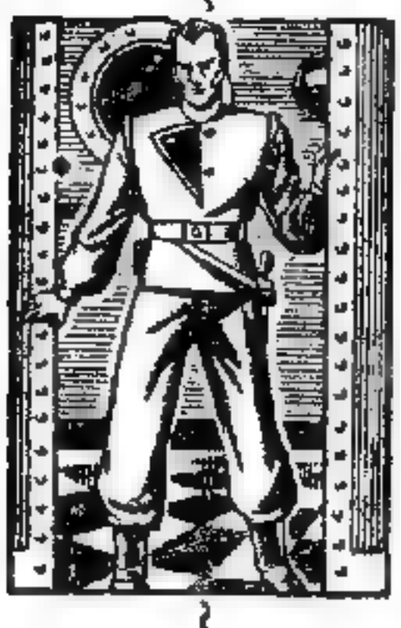
Feeling a sense of wrongness alien to his generally placid nature, Gus stepped quickly across the floor and picked up the glass. He sniffed at its dregs before putting it down on the bar and his scowl deepened. Then he lifted the empty shaker, tilted it, tasted its dregs slowly, thoughtfully.

"Gossakes!" he muttered to himself. "I'd a swore I never gave that mixing to no one—not even to Doug."

He shook his head, put down the shaker and looked at his image in the cloudy back-bar mirror. He ran calloused fingers through his thinning white hair.

"Getting old," he said to himself. "I'm getting older'n hell. Missing up on old Doug like that. Like to have seen him again—even if poor Charley West was the best of the two of them."

He shrugged, yawned and moved lazily around the bar and began methodically to polish the empty shaker.



Next Issue's Science Fiction Headliners

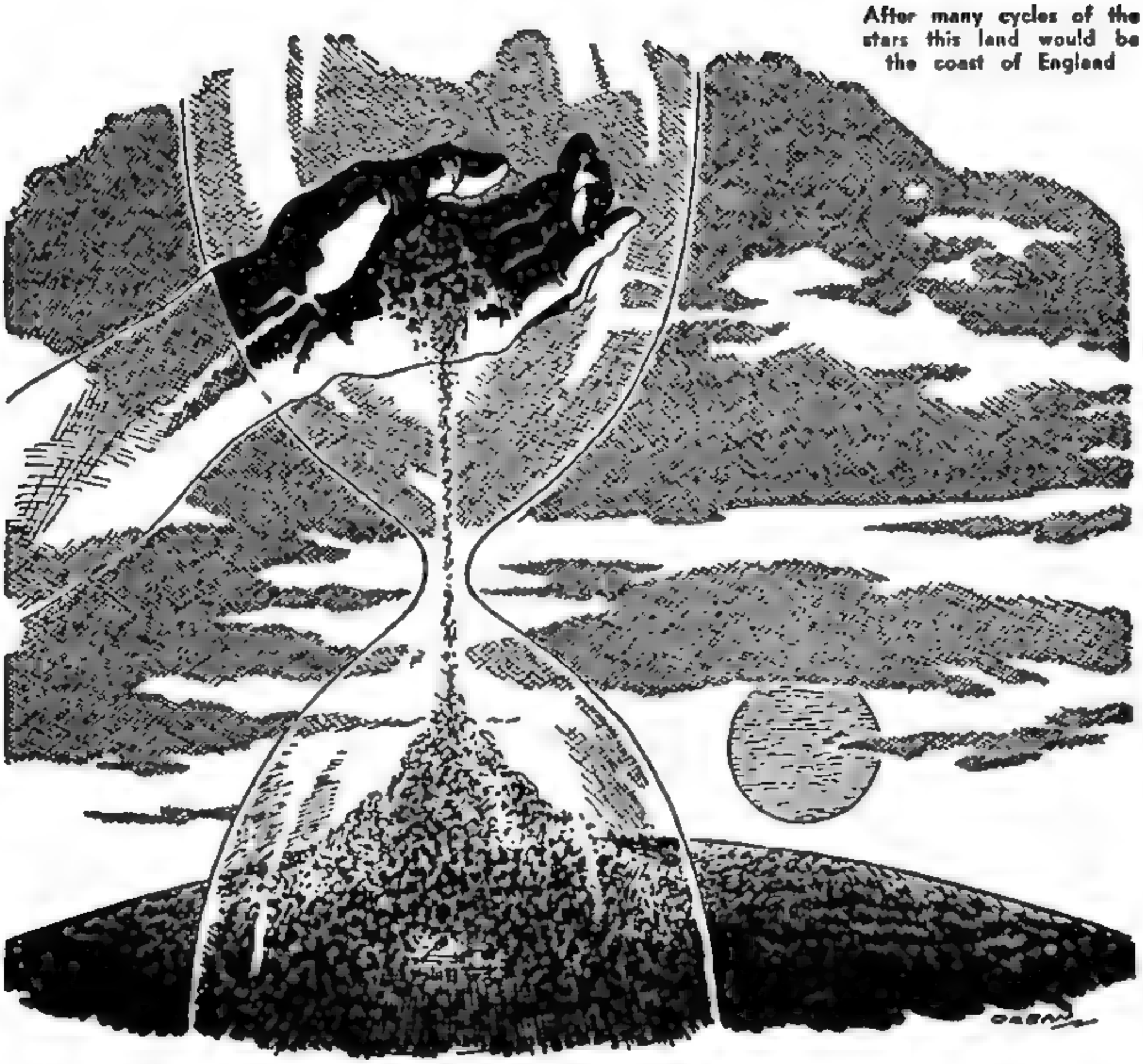
THE CONQUERORS, a Novel by David H. Keller

VIA THE HEWITT RAY, a Novelet by M. F. Rupert

WORLD'S PHARAOH, a Pete Manx Story by Kelvin Kent

DREAM'S END, a Fantasy Classic by A. Connell

MEN OF HONOR, an Amazing Short Story by Will Garth



After many cycles of the stars this land would be the coast of England

THE MIGHTY FALLEN

a new story by DAMON KNIGHT

Something happened to the Sun—and all the dreams of mankind suddenly changed!

FOUR human beings were in the room. Two of them—the two infants—had all the senses which we consider normal. Yet they were blind, deaf and dumb.

"It took us five hundred thousand years to get where we are," said Reyti. "And now"—he motioned toward the two creatures who sat just beyond the invisible partition—"we're losing it all."

He indicated the nearer of the two—a pink chubby almost-hairless small creature with a head half the size of his torso—a human baby. The blue protuberant eyes were fixed on a heap of varicolored solids that lay before him.

One fat hand went out uncertainly,

grasped a cube. The blue eyes watched with a determined fixity as the hand conveyed the cube to a point over a nearby sphere, and dropped it. The cube bounced and fell off. The baby gurgled.

"His intelligence quotient is the lowest ever recorded," said Reyti. "At thirty, when he is fully mature, he will have the intelligence of a twelve-year-old boy. These solids are the most elementary training device we have, Ingol. The normal child masters them between the ages of three and four months. At five months, the normal child begins to communicate."

He shook his head. "We have had to work out a system especially for them. We use variations of the instinctive sounds they make. Listen."

Ingol saw that his friend was about to open his mouth and looked away politely. But his structural sense, which embraced the room and everything in it, informed him of each movement Reyti made. The old scientist tightened his lips and drew them in, then opened them abruptly. He did it twice, rapidly. "*Baba!*"

The infant turned and stared wonderingly toward the source of the sound. "Ba," he said. His huge eyes mirrored ageless wonder.

The scientist shrugged and led the way into the adjoining office. He sat down behind his working space and waved Ingol to a seat facing him. "That," he said, "is the citizen of Earth —one generation from now."

"No way to stop it?" asked Ingol.

"There had better be," said Reyti grimly. "If we don't find one it will be the greatest tragedy in the history of human experience. I've had it extrapolated by several experts and the picture they get is horrible. You've seen jungle pictures? Animals fighting, eating each other? Ingol, our descendants will be like that—but worse."

"You feel this deeply," said Ingol after a pause. His long intelligent face was furrowed with pain. "But I wonder if it is as tragic to you as it is to me. Reyti, those are my sons."

The old man's brow wrinkled and he leaned forward to press his hand briefly on Ingol's forearm. It was a rare gesture among these people, indicating strong emotion. "I'm sorry, Ingol," he said. "Perhaps I should have been more tactful."

Ingol smiled wryly. "There's no use trying to minimize it," he said. "And you might as well tell me the rest now. I don't want to keep Mada in suspense. You may find a cure for the billions—but none for these two?"

Reyti shook his head with a sorrowful expression. "It's in the germ plasm," he said. "There's nothing we can do about that in a living zygote. Your sons will be—what they are—for the rest of their lives."

Ingol nodded. He stood up, looking uncomfortable. "Then," he said, "I'll have to grieve with you, Reyti—for the unborn. Please let me help if there's any way I can."

Reyti showed him to the door, but on the way Ingol paused for one more look at the children. As he watched the nearer one picked up one of the solids again —a bright green tetrahedron. The other baby reached for it. The first raised the pretty thing clumsily—and clumsily struck.

The solids were collapsible under pressure but the blow, just over the child's eye, was hard enough to hurt. He wailed.

It was the first time Ingol had ever seen an act of aggression between two human beings in all of his three hundred and twenty years.

THE wind was freshening over the low purple hills to the west, across the shadowed valley and up the wooded slope to Ingol's balcony. He leaned on the balustrade, watching the Sun grow ruddier as it sank.

If it were only a change that you could see, he thought. A simple thing that you could map in the spectrum, analyze, reproduce. But the best that could be said even now, twenty years after the first subnormal babies had been born, was that the Sun was growing older. There had been a tiny shift, a realignment of

forces. You could see part of it in the climate. Summer was hardly over and already the wind was growing chill.

Ingol shivered. He touched the slim silent mechanism at his waist and his weightless garment thickened, the particles slipping invisibly into new configurations—closing the avenues that had permitted molecules of air to enter.

It was something like that, Ingol thought—something shut off that had been getting through before. It was absolutely essential to the normal reproduction of the germ plasm—but we don't know what it was.

That was the best hypothesis of the greatest intellects of Earth—grayheads of five hundred years and more, brilliant youngsters of forty-five. The greatest brains, all striving together for a single purpose. And they had failed.

Something wasn't getting through any more. Some part of the spectrum that they had never charted. And now they would never be able to chart it.

There was a whisper of sandals on the smooth stone floor, and he perceived without turning his head that it was Mada. She came and leaned beside him, slim pale arms gilded by the sun, her floating draperies a mist of rose. Her fair hair was bound loosely at the nape, revealing the delicate shape of her jaw and the long graceful neck.

Ingol turned and looked at her. There were violet shadows under her eyes and her soft lips had a listless droop. She had wanted children very much.

Suddenly her eyes narrowed and she raised her head a trifle. Ingol followed her gaze and saw a tiny moving speck just above the hills.

"Did you invite anyone tonight?" Mada asked.

"No," said Ingol. "I can't imagine who it could be." He discovered that his heart was beating rapidly. The speck was growing. He directed his thought toward it, calling, "Who is that?"

There was no reply.

Ingol said, "Darling, I think you'd better wait in the house." She looked at him with wide troubled eyes. "Please," Ingol said, and at the urgency in the thought she turned and went inside.

Ingol watched until the shape soared close enough for him to read the symbols painted on its side. It dipped and landed twenty yards away on the slope below.

A man stepped out, peered up at the balcony and began striding up the slope. He was young, broad-shouldered with a shock of black hair. Ingol said again, "Who is it?" But he expected no reply.

It had been twenty years but the bone structure was unmistakable. He knew his son.

At the foot of the stairway the young man paused and looked up into Ingol's face. Ingol stared back, sick with sorrow. The face, so like his own, had a childlike expression. The eyes were those of a bewildered small boy.

The man turned abruptly and mounted the stairs. He walked directly to Ingol and his mouth opened. Sounds came out, sounds like the barking of an animal?

"My son . . ." said Ingol. Helplessly he extended his arm toward the open doorway. The young man hesitated, then strode through it and turned in the dusky room, facing Ingol again, waiting impatiently.

Ingol went to meet him. He took a writing pad from a cabinet. He wrote: *What do you want?* He held out the pad and the stylus.

THE young man took it, read the message, then wrote something in bold strokes.

Ingol read: *Are you my father?*

He replied, *Yes. How did you know where to find me?*

The young man wrote impatiently, *I saw a map they left turned on. Never mind that. Why have you never come to see me?*

The phrase was added pain. Normal men and women depended little on vision. The idiom for "visit" was a warm all-embracing word, "see" and "share" and "touch" and many other things all together. There would have been no point in teaching it to the subnormals in the reservations.

How to explain? He wrote finally: It *was better. We are too different from each other.*

That would not satisfy the young man. His stylus-strokes ripped the page. He crumpled it and started over. *Why do you keep me a prisoner?*

With a shock Ingol realized that there was more than dullness in those wide, dark eyes. There was madness.

Mada came into the room.

The young man whirled at the sound. He stiffened when he saw her. Then his face contracted in pain and suddenly he was leaping toward her, throwing the writing pad away. He roared the same sounds over and over. It was unmistakably the question he had just written.

Mada did not move; there was no time. Her expression hardly changed before he was on her, bearing her to the floor, his hands seizing her throat.

Ingol took a slender heavy statue, raised it in his two hands and brought it down on his son's head.

"That was too much!" said Reyti. "To attack another human being—worse, to force a human being to attack him. . . ." He stopped and laid his hand on Ingol's arm. "Does it hurt you to discuss it?" he asked. "Shall I wait till later?"

Ingol shook his head wearily. He was still not completely himself—the shock to his nervous system of an act which had made him, in his own eyes, no more than an animal, had been very great. But the pain was dulled now. It was as if something disgusting and painful had happened to someone else.

"Let me tell you what we were trying to do," said Reyti. "We knew that some day these—creatures—would have to be let out of their reservations. There would be too many of them. And some day not long after they would take over the Earth, to manage it as best they could.

"We were trying to set up a new social system, something they could handle without direction. And a new technology, simple enough for them. We were rewriting books, making tools, planning cities.

"We thought—they are poor things but they are going to be all that is left of the human race. We can give them a system in which they can live out their lives and have children and be happy. The rest is out of our hands. But now—"

He looked at Ingol and his hand clenched. "Ingol, they have created a cancer in us. I have it—I admit it. What we are going to do now is as shameful as the things *they* do. But the alternative is worse.

"The race will die as cleanly as it can. Ingol, we are building a weapon. There will be not a thousand acts of violence over the five or six centuries that remain to us—but *one.*"

Ingol could not help himself. He turned his face away and felt the scalding tears course down his cheeks.

IT was to be painless. It was easy to build a weapon of any desired kind once the idea itself was possible. This one was small enough to be carried in a two-passenger airship. It could project a narrow beam or a wide one to a distance of ten feet or a hundred miles.

It chose its victims and it killed instantly without physical violence. The technology of the last men was ample to produce any other sort of weapon. But their psychology could never have accepted any kind but this. Now it was to be tested. If it performed properly the rest would be swiftly done.

The young man stood facing the glittering machine. His arms were bound to his sides. His heart pumped powerfully, smoothly, in his chest and the tension gathered in his nerves and muscles and tendons. He looked from the machine to the men beside it. He saw the grayheaded scientist, the one whose hate shone through his eyes—Reyti.

He knew that he was to be killed.

He knew what had happened to his brother and the hatred within him met and matched that of the old man. They were going to kill him and all like him as they had killed his brother because, in their vanity and pride, they could not bear the existence of any less perfect than themselves.

Because of that they would kill him

and kill Glann, the girl with the shining dark hair and soft lips, whom he loved with all his heart. And in reality, they would be killing themselves.

He saw the old man pointing to the machine, the part of it that moved over a semicircle with marks showing where the moving part rested. Then the old man pointed to one of the marks and looked at him. He put the moving part carefully at that mark.

He went behind the machine and moved other things. He peered over it through a little circle and looked straight at him. Then his hand appeared at the side of the machine and moved toward a handle.

The young man moved. Roaring he tipped himself forward and ran, charged into the thick of them, knocking them down, butting them. He strained with his arms at the bindings. The old man was turning the machine around, turning the shining snout of it toward him again. He leaped, straining with all his strength at the adhesive bindings.

They gave, came away, taking skin with them, but he did not feel pain. He grasped the machine and pushed it at the old man and they both fell. When he stood up he pulled the machine off the bloody ruin of the old man's face and shifted one hand for a better purchase, felt it slip and saw that he had grasped the moving part, the one that moved on a semicircle. He took a better grip; he held the machine as the old man had done, by the handles. He turned toward his enemies—

—and they died. Others came running through the doorway. He turned toward them, still holding the handles of the machine tightly in his hands, and they died as they fell.

He stepped out into the corridor, muscles tight with the effort that held the machine upright, strode toward freedom. . . .

Much later, the young man's airship faltered and slowly descended toward a grassy plain near the arm of a sunlit sea. He fumbled with the simple controls but he could not raise the ship again. They landed. Glann said, "Why are we stopping here?"

He looked at her and then at the shining machine beside him. It lay on its face, as it had lain for many months in this same airship. He had been many times around the world, he and Glann, for he wanted to be sure that none escaped him. He would not entrust the machine to any of the others. Perhaps the thing that made the ship go was exhausted. He had used it a long time.

He thought about it. He did not want Glann to think that there was anything he could not do if he wished. He said, "This is a good place. Why should we go back to the reservation or the cities? They are all full of dead people. We will stay here and live."

Glann wailed, "But I want to live with the others. I don't want us to be all alone here. . . ."

He cuffed her lightly. "There will be others soon enough," he said. "Meanwhile, I will make you forget them."

Her wailing stopped. She put one hand to the red mark on her cheek, and her eyes were soft on his. "Yes," she said.

He grunted with satisfaction. He stepped out of the airship, sniffed the air, and surveyed the realm that was to be his—the coastline that, after many cycles of the stars and incomprehensibly many births and deaths of his descendants, would be the shore of England.

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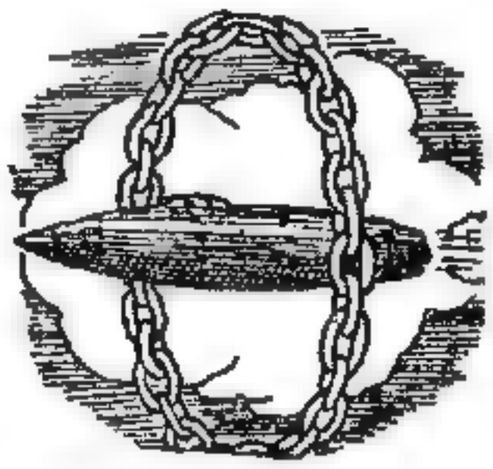


EMOTION SOLUTION

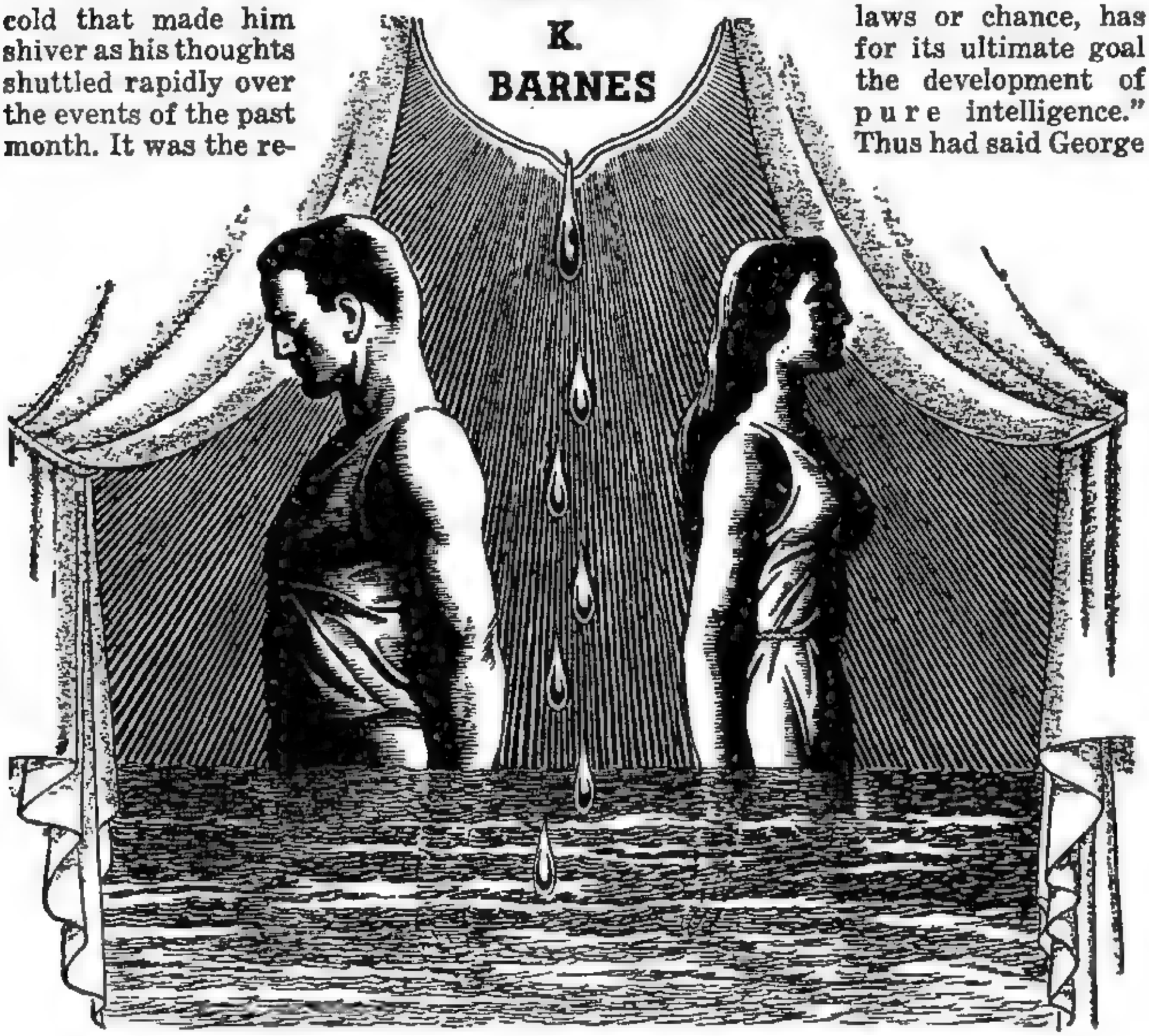
A pompous megalomaniac seeks to "liberate" humanity from its feelings of love and pity, fear and anger!

By ARTHUR K. BARNES

KING squatted beside the scrawny sagebrush, hunched against the cold of the night wind as it whooped its way across the Mojave. He was perched on a slight rise where he could see the stretch of the highway for miles in either direction under a sickly moon, a gun in his hand like a character from a cheap thriller.

But it was not the cold that made him shiver as his thoughts shuttled rapidly over the events of the past month. It was the re-living of the moment he had stood in Jonas' laboratory watching the loathsome, somehow obscene, stuff in that beaker. Memory brought back every word, every gesture. It had been a month ago tonight.

"All evolution, both social and genetic, whether operating under some controlled design or by natural causes due to laws or chance, has for its ultimate goal the development of pure intelligence." Thus had said George



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Jonas, typical polysyllabic speaker with the political orator's trick of injecting great significance into commonplace utterances.

"Hear! *Hear!*" Ted King had grinned abstractedly and made mock applause. But his attention was riveted on the strange fluid, that seemed endowed with a shimmering, restless motion. His spine crawled. King, handsome and husky six-footer, dabbler in art and occasional contributor of corrosive articles to highbrow publications, had clung to a lifelong incomprehensible friendship with this man with whom he apparently had absolutely nothing in common.

Jonas at first sight was a fat little bladder of a man, all inflated with words, spouting and waving his arms for no good reason. No one would ever know him for the Dr. George Jonas whose reputation as a physiological psychologist was proclaimed from one end of the scientific world to the other.

But Ted King knew these things, knew also Jonas' incurable sense of the dramatic which led him to indulge in meaningless preliminaries whenever he prepared to deliver some startling theory or sensational new concept based on his clinical or experimental experience.

It was King's way to speed these "warming-up exercises" by ridicule. As a rule Jonas refused to be hurried, his almost visible ego shedding sarcasm as if it were so much dust.

"This pure intelligence, of course," he had continued in measured cadence, "cannot exist apart from some material form. I am convinced that it will find its eventual housing in a form of homo sapiens differing in no essential from that he now assumes."

With an effort King had wrenched his attention from the abomination in the beaker. "Come, come, George. Mean to say you honestly believe evolution will go no farther than man?"

JONAS had removed his hand from inside his coat front, abandoning his absurd Napoleonic posture, leaning forward earnestly. "Let your imagination drift down the slow spiral of organic evolution to the existence of the primordial cell, buried in slime and ooze, receiving its first inspiration from the warm rays of the sun.

"Watch this cell gradually work its way out of the slime into the streams and seas, from the water onto the land and air. See it branch out into a million diversified forms, all interdependent upon each other for existence, a colossal community of living things.

"It's upon the apex of this seething throbbing biodynamic pyramid that the universe has succeeded, after ages of struggle, in erecting its semi-sublime egotistical masterpiece—man!" Jonas could be a brilliant and fascinating man when he chose, King thought, not unconscious of the honor of being in his confidence.

"It's obvious enough," Jonas had pursued, "that there's nowhere else for evolution to go. It's almost reached its climax. Naturally we have not reached perfection as yet. There will be physical refinements. There are certain handicaps."

The high-pitched whine of a motor brought King's head up. Headlights pricked the darkness, grew in a rush, then vanished as the roadster fled along the highway into the night. King's thought-train, momentarily roused to the present, slipped back. He had asked Jonas questions, he remembered.

"But what about this pure intelligence you spoke of? How are we ever going to achieve that state?"

Jonas' lips had quirked in that superior smile of his. "Precisely. You are probably well aware that man has made no appreciable evolutionary progress for the last five thousand years. New inventions he has made, new discoveries—but there's not one thing we do today that couldn't have been done equally well by an ancient Egyptian, given the tools and knowledge acquired through the centuries.

"All right, why haven't we made any development? Why haven't we come any nearer to the ideal of pure intelligence? For one reason only, my dear King. We

are afflicted with the thus far insuperable handicap which we call emotion."

King had smiled there in the darkness, an echo of his laughter that day in the lab. "You'll have your hands full," he remarked, "trying to picture the human race without emotions. It's my opinion that pure intellect was never intended to exist apart from contemporary emotions."

Jonas had made an impatient gesture, as if to a dull child. "No, no, no! There are a number of persons—myself, for example—who are able to divorce their emotions from their intellect. They are the most eminent figures in the various professions.

"The greatest doctors never allow emotion to interfere with efficiency. The finest actors have their emotions under complete control to turn on and off at will. The keenest lawyers and mathematicians never permit sentiment to befog logic. That's the reason they are eminent."

King had made a characteristic thrust at his friend's conceit. "But these doctors and mathematicians—and you—are the chosen few, of course. Superior beings. But how can you hope to offer these great blessings to the common herd, say to me?"

Jonas took the sinister beaker from the bench, held it up before King as a man offering a toast. The contents seemed to boil turgidly, casting up little flecks of iridescence that somehow nauseated the watcher.

"Here," said Jonas, "is how. Now see—regardless of the half-dozen or so conflicting theories as to the nature of emotions, we are agreed that they are controlled by and are concerned with the nervous system and the adrenal glands, with some sort of emotional center, not too definitely located, in the brain.

"All external emotional stimuli have their counterpart in some form of autonomic activity and secretion of adrenin. Very simply then by the destruction of autonomic emotional functions—and after all, emotions are simply vestigial remnants, as much as the vermiform appendix is—we can at one stroke advance measurably nearer to the end and aim of all evolutionary progress."

Another car materialized from the darkness, booming along the highway, but it came from the wrong direction and scarcely penetrated King's preoccupation. The muted thunder of its engine made a quiet current of unobtrusion along which King's thought-images were carried like sticks on a stream back to Jonas' laboratory again.

King had controlled the disgust which set his teeth on edge as he pointed to the beaker. "Then this is your—your evolution drug."

Jonas had beamed and nodded like an animated doll. "Nicely put. You are perhaps familiar with luminal, which counteracts the influence of adrenin in its effect upon the autonomic system. You may not be so familiar with the properties and action of the drug curare.

"Oh, yes—in sufficient quantity it fulfills the requirements of the mysterious South American poison used by detective novel writers some years back. But properly controlled it acts even more strongly than luminal on the autonomic.

"By experiments with these and similar drugs, I've managed to evolve what you see here, infinitely powerful—a drop or two is sufficient—to have a permanent effect on the system. Gallons of it are now in preparation. When this tedious process is complete, I shall introduce it into the water supply of southern California, at Hoover Dam and Owens Lake. A splendid experiment, eh, King?"

It was then that King had the first glimmering of the idea that led to his being on the desert in the middle of the night with a dozen highwaymen figuratively at his back.

IT was typical of both men that they had accepted this monstrous proposal without questioning its feasibility. Jonas did things on the grand scale. So did King.

King's memory reproduced his every action that day in the lab. He had

jumped to his feet and walked to the window. Many stories down in the street below were men and women playing, laughing, loving in the sunshine—living. Some of them had been fighting too with high courage, knowing the pain and pleasure of defeat and victory.

King had turned to Jonas, knowing with one look his every argument to be useless, but saying, "But man isn't ready for this thing, George. He's not capable of survival under such changed circumstances."

Jonas had grimaced impatiently. "You're not a child, King. Use your wits. You know evolution moves irregularly, with periods of non-development followed by waves of progress. When it occurs in a species it's called a mutation. I say five thousand years of stagnation is enough for our species. It's time for a change."

"That's all very well, George, but can't you see this change must be natural? Who are you, after all, to decide what that change shall be? Who are you to exercise your will in such fashion over five million lives without their consent or knowledge? What gives any man the right to set himself up as God?"

Jonas' smile had been benign and smug. "Man, as a functional entity, like a corpuscle in the living universe, is created for and depended upon to assist in furthering the refinement of the sublime cosmic tendency. It is my fortune to be endowed with the intelligence to foresee that tendency, and the means of its promotion has been given into my hands. It would be sacrilege not to use it."

The wind blew harder, colder. King, in the undergrowth, trembled again. He digested that remark of Jonas', even as he'd chewed it over a bit that memorable day. And now he groaned bitterly, even as he had done a month before.

"But on millions of persons, George!" had been his protest. "Can't you try the stuff on two or three at first? You can get subjects from the prisons. Test it out before this wholesale affair."

Jonas shook his head. "I'm disappointed in you, King. I expected you to help, not hinder. As for trying it out on two or three—*bah!* Did you ever hear of an experiment of any worth, on rats or guinea pigs or any form of life, conducted with two or three subjects? Ridiculous!"

King's jaw had suddenly shot out, corded. "Very well, George. Your colossal ego is too much for my poor arguments. But get this." He stuck out a muscular finger and tapped Jones rhythmically on the chest. "You're not —going—through—with it. Before I let you do such a ghastly thing I shall strangle the life out of you!"

Grim enough, that threat—and sincere. But Jonas had closed his eyes in gentle remonstrance, taking King paternally by the arm. "Take it calmly, my boy," he had murmured. "Nothing to get wrought up about. Go home and think it over and then—"

But King had yanked himself savagely out of his friend's grasp and strode to the door. Crimson-faced, he had snapped back over his shoulder, "Don't forget what I said, George—I mean it."

Then Jonas' temper had slipped its leash and the two of them yelled threats and blasphemies at one another, like two puppets out of a melodrama, until King slammed the door.

That was the moment King's vague idea had taken on the proportions of a distinct possibility, the possibility that had led him to the Mojave Desert on a cool spring night, to watch the pageant of the heavens wheel imperceptibly toward the west while he shivered and cursed Jonas and all his works.

Jonas and King, however, had been friends too long to let an incident come between them. For two days they remained huffily apart. Then King phoned an apology and within an hour they were drinking and chatting together again as if nothing had ever happened. The old relationship was resumed, save that by common consent Jonas didn't invite King to watch the progress on the evolution drug. King hadn't been able to keep the subject entirely out of mind though. Once he'd asked a question about it.

"George, I suppose you've made some tests on animals with that drug of yours. How'd they turn out?"

Uneasy ghosts had come to sudden life deep in Jonas' eyes at that, and he had wet his lips with the tip of his red tongue. "Of course," he shrugged. "They were about what I expected. Complete success impossible. Animals haven't the requisite degree of intelligence."

A WEEK OR SO later King had broached the subject, perhaps a little tactlessly. "What about your wife?" he said abruptly. "Surely you're not going to let her—that is you won't destroy her capacity to love you?"

Even that had failed to shock Jonas out of his determination to go through with his scheme. "Love?" he had said, insufferably superior. "*Love?* Are you sure you know what you're speaking of? Helene and I are well mated, true. We have an intellectual affinity, a similarity of taste.

"The only jarring note in our marriage is her tendency to emotionality at times. Seems to me the administration of my—evolution drug—will simply bring to fruition what is now the basis of a perfect companionship."

After that King said no more. But he hadn't slept. King was a man of action. He had watched, waited, bided his time, laid his plans. And when an unmistakable gleam in Jonas' eyes and a familiar something in his bearing shouted aloud that success was his and the great experiment was about to be initiated, King had been ready.

From Helene, who worried herself thin over the whole business and from vague hints by Jonas himself, King had managed to learn the modus operandi to be used in introducing the drug into the water supply.

It was very simple—three or four oil trucks would make their way at night across the desert, two to the Hoover Dam, the others to Owens Lake—and the drug would be quietly dumped. There were plenty of men who could be bought for a job like this and who would vanish without talking afterward.

But that's what made it easy for King too. He jumped up, beat numb arms about, walked rapidly up and down. All he had to do was get a few tough scrappers whom he could trust, form two groups and halt the trucks on their journey. Another pair of lights was approaching now, more slowly, with plenty of noise. That would be the first truck.

King peered into the darkness. Somewhere further down his men were waiting his signal, lights with *Road Closed* signs ready. This was a rotten way to treat a life-long friend, he reflected, but the old adage about ends justifying means was never truer.

Although there was nothing actionable in Jonas' intentions, as soon as one of the truck drivers talked—and they'd talk, all right—the law could be informed and Jonas stopped from proceeding any further. It wasn't as if he were having Jonas thrown into prison. His reputation and money would smooth things over nicely. It would be a matter of injunction and a warning from the judge or something of that sort—King was vague about legal matters.

The truck swept up the slight rise, big Diesel engine booming quietly. King tried to see into the cab but he was momentarily blinded by the lights. It was a big oil tanker though—that much he was sure of. He smiled grimly, lifted the Very pistol and fired. The report was carried away by the wind. A second passed, then high in the sky a colored light bloomed. Down the road a bit of sudden activity was manifest, with lanterns and running figures.

King put the pistol away and trudged down the road to where the oil truck had been halted. Perhaps a half-dozen men stood in the circle of light, one or two with guns. Presently King came up, calling above the rush of winds.

"Good work, fellows. What do we have here?"

He glanced at his men, all big, stubble-faced bruisers. They looked back at him, grinning boldly, disturbingly. He looked at the men from the truck, and his jaw dropped a little. One of them was George Jonas.

"Didn't expect me, did you, King?" said Jonas.

"Hardly."

"But I expected you."

King stared, then stirred uneasily. He looked around the circle of faces again and didn't like what he saw there. Jonas went on.

"You see, you were a bit transparent. I knew you'd try something like this, so I put detectives on you. I've been in touch with these men of yours and your best price has been beaten. They're in my employ, not yours.

"We let you go through with your little playlet, partly because warning you of our foreknowledge would enable you to get more men, partly because I didn't wish to spoil your fun." Jonas' voice was a bit regretful. "But the game's over now."

Anti-climax sickened King, then fury burned in his cheeks. He turned to Rossiter, the leader of his crew. *"Swine!"* he ripped out savagely. "Take money from both sides! A cheap double-cross! Not hard to see where loyalty comes in your lexicon of virtue!"

Rossiter laughed easily. "Take it easy, boss. You'll get y'r dough. I ain't cashed the check a-tall an' I didn't bother about gettin' anyone to watch the other road, either. Y' won't be hurt. Y' won't lose a dime."

KING boiled over. He smashed Rossiter viciously across the jaw, belted the truck driver two or three times about the head, then went down fighting like a madman beneath a rush of brogans. In thirty seconds he was neatly trussed. Jonas smiled.

"The man of action! Well, perhaps we must admire you for an animal instinct, King. It's not entirely your fault that you chose the wrong course of action."

He gestured briefly to the truck-man who climbed back into the cab. The heavy engine began to thunder again and the vehicle moved away. The little red blob of light grew smaller, dimmed

[*Turn page*]

WINS WRITING SUCCESS THOUGH CRIPPLED WITH ARTHRITIS

"When I became almost crippled with arthritis, N.I.A. training proved its value. I began acting as local correspondent for two papers. Then, I started a publication of my own. 'The Beekeeper' became a reality and a success. Were I physically able, I would crawl to the top of the house and shout the merits of the N.I.A. training."
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in the distance to a single incandescent spark, winked out.

Dizzily King felt there was something horribly symbolic about that tail light but his head was spinning too much to think clearly. He gave up. Rossiter steered him toward the ancient car that had brought them there, opened the door for him.

"Okay, buddy. Let's go."

* * * * *

James Hancock rose from the dinner table on the evening of July the sixth and looked at his watch.

"I'll be late for club if I don't hurry, dear," he called. "We're going to listen in on the fight tonight after the meeting is over." He grabbed his hat and met his wife at the kitchen door. He bent over to kiss her, and she turned her head aside a trifle. Hancock sensed something amiss. He was not long married and was still in love with his wife.

"What's the matter, honey? Have I done something wrong again? Are you sore about something?"

Mrs. Hancock said tonelessly, "No. I'm not angry with you. Kissing is simply messy and unhygienic, that's all."

Hancock opened his mouth for a hearty laugh, saw that there was no joke intended and shut it again. He looked concerned. "Say, are you sick? How do you feel?"

Mrs. Hancock considered a moment. "No, I'm not sick, though I did feel a bit upset a few moments ago. Perhaps it was the tap water. It tastes queerly tonight."

Hancock remembered. "Say, it did seem flat. That's it, I bet. Well, you take some bicarbonate or something. I won't be late."

Hancock went to the door, kissed his unresponsive lady again and went out. As he crossed the porch, he experienced a momentary sensation of vertigo. He lurched, steadied himself, then waited to see if it would recur. It did not, so Hancock went down the walk making mental notes to see his councilman about the unsatisfactory water supply.

Hancock stood at the curb as was his custom, looked to the right, to the left, waved to his wife who stood in the doorway, then started across the street. A taxicab whizzed round the corner and bore down upon him. Incuriously, without fear or alarm, Hancock looked the juggernaut in the eye.

Sluggishly he moved to get out of the way, but his reactions were slow. The cab driver lethargically applied the brakes and swung into a skid. The front fender clipped the young man from behind and catapulted him up over the curb and headfirst into a lamp-post. He bounced back into the gutter, his brains splattering on the street.

The cabman got out of his car and walked over to where the corpse lay in the street. Mrs. Hancock came down the walk and crossed the street to stand beside him. The cabby spoke calmly.

"Deader'n a herring. Nothin' we c'n do about it."

Mrs. Hancock's blue eyes were serene. She said simply, "Yes. He's dead."

The taximan climbed back into his car and drove away. Mrs. Hancock, a creature of habit, went back into the house and washed the dishes. Reason told her they were harder to clean if allowed to stand dirty very long.

The San Diego Symphony played as usual to a packed auditorium. Ravel's *Bolero* was the climaxing number and a ballet and dance team went through the routine with all the sensuous passion that only Latin lovers can describe.

In the balcony, with part of his view cut off by a pillar, sat Bert Manning. Manning had drunk no water that day. Indeed, many golden days and roseate nights passed when Manning drank no water. Water, he felt, was a beverage for inferior beings, something to be partaken of only in direst necessity, a stuff to rinse the mouth with, to wash with.

Brutes drank water but Manning confined himself whenever possible to the nectar that comes in squat, flat bottles with fancy labels. He roused himself from his warm relaxed sensation of well-being and whispered to his neighbor.

"Audience is quiet tonight, ain't

they? Like a bunch o' clothes dummies," he said.

The stranger sat stolidly, another clothes dummy among a thousand other clothes dummies. Like the majority of those present that night he too had experienced a momentary sense of nausea that evening shortly after drinking a glass of water. He spoke politely and unencouragingly.

"They're very well behaved."

Manning persisted. "Orchestra's deader'n a campaign speech. No life, don't you think?"

"Their technique is flawless."

THE *Bolero* came to its end, the dancers bowed off. From the audience came a faint spattering of applause which ceased almost as soon as it began, a mild expression of intellectual appreciation of a bit of work well done—nothing more. Perhaps a dozen or so men and women, including Bert Manning, applauded loudly for several seconds, then paused to look around, abashed, amazed, a bit frightened at their passive and incurious neighbors.

Knowledge began to seep into Manning's liquor-dulled senses—knowledge and fear. These wooden-faced creatures were not men and women as he had known them. Something was wrong. They were no longer human. They—Manning began to shudder violently and he jumped up to make his way to the aisle, flinching each time he was forced to brush against another. A muttering began to come from his throat and by the time he reached the lobby it had become hoarse.

"Lemme out o' here! Lemme out o' here!"

Passers-by looked at Manning as he threw away his bottle and ran down the street in the night but they expressed no interest, no curiosity, nothing.

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rived or had already left for the stadium before feeling the effects of the sickish-tasting tap water—so the place was jammed.

Through five preliminary matches, dull dances for the most part, the great mob had sat quiet and unruffled, occasionally applauding as a matter of custom, but with no enthusiasm. A small percentage, those who drank bottled water that night, stamped and whistled and threw liquor bottles and peanuts into the ring as the principals for the main event were introduced. For the most part, however, there was no demonstration.

"Tiger" George was the challenger, a black, lively Negro all bulging with muscles. At the opening bell he came ravening across the ring and piled into his calm opponent, blazing murderously with all the fighting man's cruel fire.

For three rounds he ripped and clubbed, sending the champion to the canvas for a short count in the first and second and twice for nine counts in the third. Between rounds two and three the Tiger thoughtlessly swallowed a little water while rinsing his mouth. Assimilation was speeded up by his intense physical activity.

Tiger George came out for the fourth ready to make the kill. He stormed across the ring, both arms swinging, and sent his opponent down again. The big black boy posed on the ropes in a neutral corner, while the toll went up to nine. And suddenly the fire went out of his eyes, his body.

Ringsiders said they thought George had a momentary sickness, a dizzy spell. The rest of the crowd dispassionately labeled the challenger as a yellow-spined coward—which he was not—whose courage ran out of him like water when he saw a white man with guts climb off the floor for the fifth time.

There was none of the pitiless scorn, no disparagement, that generally characterizes this attitude—no feeling of superiority by those who are above emotions like fear over those who cannot control them. It was simply an opinion

agreed upon but about which no one cared one way or the other.

Be that as it may, the champion clambered to his none-too-steady legs, got on his bicycle for the remainder of the round, then came back coolly to slash the Tiger to bloody ribbons and carry off the decision with a beautiful exhibition of boxing.

To the end of the fifteenth round, George was a plodding, puzzled and sadly outclassed fighter. The Los Angeles papers wondered editorially how the matchmakers had ever thought Tiger George a fit man to be seen in the same state with the champion.

Hal Rossiter's IQ was not high. That explains his stupidity in ignoring Jonas' advice to get out of the country. But on the night of July the seventh he wished to heaven he'd taken that advice. Because the world, as he knew it, had gone utterly and completely mad.

Brains enough he had, it is true, to realize that Jonas' intentions toward the city's water supply might not be strictly honorable. So far he had managed to remember to drink nothing but milk or liquor or spring water. But beyond that, his addled wits refused to function. The vast terrible placidity that had lain like a stifling blanket over the throng at the fight the night before throttled his courage.

The sight of people going about the day's business without expression, like automatons, with neither grief nor joy nor despair nor happiness, sent Rossiter skulking in panic through the alleys. He was afraid to leave town because bus-drivers and pilots and engineers drove as if they didn't care what happened.

He was afraid to stay because he felt alone. Fuzzily his memory recalled the man King, who had tried to pit his puny forces against this—this thing, whatever it was. King would know what it was all about. He must find King.

Night-life had largely ceased, there being no desire for emotional release of any sort. So Rossiter had the streets

[*Turn page*]

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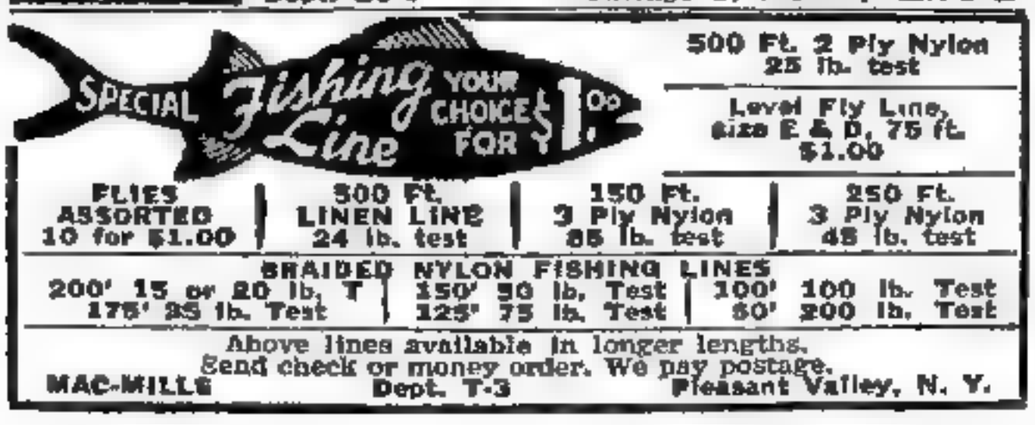
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pretty much to himself by eleven o'clock as he slid through shadows to the entrance of the building that housed Jonas' laboratory. The directory gave Rossiter the room number and he went up the elevator. Lights still burned in Jonas' huge suite and Rossiter chewed his nails and paced the hall in doubt, fighting his fear.

BUT it was ridiculously simple, after all. Rossiter felt foolish when he thought about it later. All he did was open the door and walk in. Jonas sat in an armchair by the window and said not a word in answer to the intruder's challenges—so Rossiter prowled through the rooms, finally finding a bedroom that was locked. He turned the key, twisted the knob, and called out.

"Are y' all right, boss? Take it easy. It's only me."

Ted King left his prison and went to the front room. For a long time he stood looking at Jonas. Anger had long since burnt out of him, leaving only the bitter ash of pity and despair. For three days he had paced his room, racked with frustration and horror, waiting for the drug to make its way downstream to the city.

Finally it had done so and the result had stunned him into immobility. For twenty-four hours he had sat before the window, even as Jonas had sat, and watched the death of five million souls. Before his horrified gaze men and women had somehow ceased living.

Every man's face, as he went about the business of earning money that he might buy food to feed his belly, was as blank as his neighbor's. For a day or so, habit had claimed them, giving a semblance of humanness. Men tipped their hats without thinking, shook hands mechanically, peeled back their lips in meaningless smirks.

But presently even these familiar touches were discarded and the streets were peopled with unhuman things, a sort of living dead. The "evolution drug," acting as it did contrary to adrenin, left people unprepared for emergencies, sluggish. Traffic accidents

increased at an alarming rate. The dead and maimed were left in the streets until some city ambulance came casually along and removed them to hospital or morgue, more with the idea of clearing the road than anything else.

Attendance and performances at sporting events declined to practically nothing overnight. There was no longer any thrill in seeing a home run belted over the fence or a sensational record-breaking finish on the track—nor was there any satisfaction in the accomplishment.

There was an awareness, of course, that something had changed. There were evidences of a former state of mind on every hand and intelligence reasoned that somehow all those things called emotional responses had disappeared. But no one cared one way or the other.

Technical men in other parts of the country analyzed the water and found a foreign substance in it. Tests proved it to be the cause of the terrible state of affairs on the Coast. But their warnings came far too late.

Of the tiny minority who had not tasted the contaminated water some left that part of the counry as fast as possible, others managed with a sense of humor and understanding to stick it out. A few went insane and ran screaming through the streets.

King looked at Jonas, who was staring blankly at infinity. "Not quite what you expected, is it George?" he said.

Jonas just sat there.

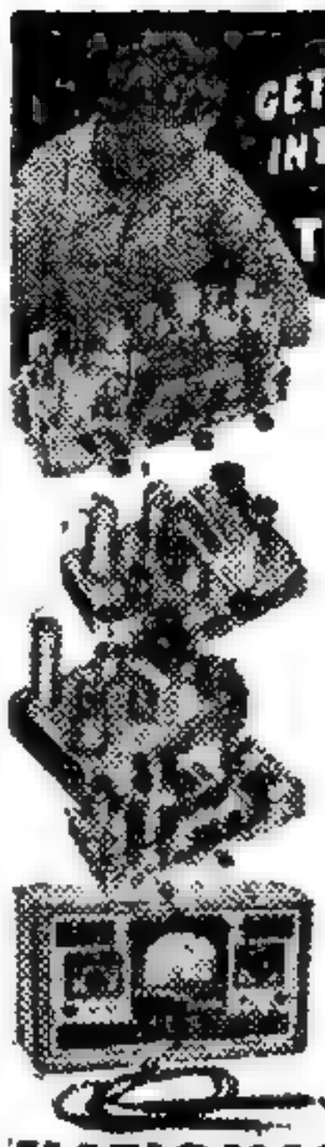
"How does it feel to have murdered five million, or ten million persons?"

Jonas said nothing.

"Pity your conceit was so colossal—else you might have had the good fortune to drink the water yourself. I should perhaps thank you for sparing me that horror." He gestured to the row of gallon water-bottles, labeled by a well-known firm selling spring water, that lined one of the lab benches.

"But you—best thing for you to do is drink some of your own stuff. Spare yourself the lash of your emotional con-

[*Turn page*]



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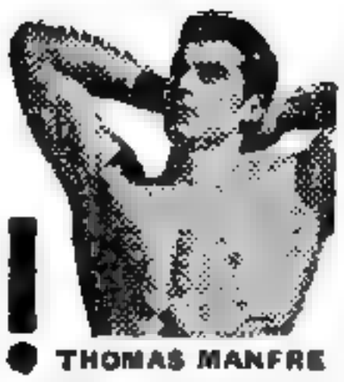

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science for the next thirty years."

Jonas' head began to shake from side to side and his lips pursed into a series of soundless syllables, "No—no. No—no."

King stared out of the window. His own conscience was free; he had done what was right. To have attempted to warn the populace by means of newspaper or radio would simply have given them a big laugh and merely postponed Jonas' "experiment." Yes, he had done the right thing in trying to stop it alone. He turned.

"Where's your wife? She must be proud of you now!"

That goad finally prodded Jonas awake. "Helene?" he said in a dazed tone. "Helene? She's gone. Walked out on me. Know what she said? She said, 'George, you're a raving, pompous lout. We have nothing in common, so long as you allow your silly emotions—your priggishness and insufferable cockiness —to control your life.' "

Jonas looked up with a ghost of his old confidence. "Ha! Can you imagine *her* calling *me* overemotional? It's a laugh." But it wasn't a laugh at all, Jonas knew. "So she said good-by and went away."

King stared down at the city streets, teeming with flesh-and-blood robots. And through some mental quirk his mind slipped back to his school days when he had studied Greek mythology, and one of the somber figures therein. "Thanatos," he muttered to himself. "Thanatos, personification of Death."

George Jonas was on his knees before the wide window, staring blindly upward. "Oh, God," he cried out. "What have I done?"

King felt a twinge of pity for his friend. "You unwittingly conferred at least one blessing upon these people, George. They cannot reproduce. All sexual stimuli have an origin in the emotional centers. Even gross bodily stimulation must find its counterpart as an emotional expression. These people have no emotional centers—therefore, they can no longer reproduce. Within a gen-

eration or two your experiment in folly will have vanished from the Earth."

Jonas appeared not to hear. He still kneeled before the window and looked up, begging, "What have I done here? What have I done?"

Hal Rossiter watched the two men wide-eyed, listening to words that he did not know, seeing things that he did not understand. He crouched in a corner. He whimpered in his throat in fear.

COSMIC ENCORES

(Continued from Page 6)

course, is that in stf, as in everything else on Earth or in space, future, present and past are parts of a single fabric. Understanding of any one of them cannot be complete without knowledge of the other two.

And especially in science fiction is the past not only correlated to but inextricably interwoven with both present and future. The lead novel in this issue, for example, J. M. Walsh's epic VANDALS OF THE VOID, was written more than fifteen years ago—yet it deals entirely with a future still far distant. And ENSLAVED BRAINS by Eando Binder, our winter issue novel, similarly written long ago, took place in a very near future.

It is possible therefore at least in part to check the prophetic accuracy of authors to whom World War Two was the thinnest of phantoms in an era of economic hardship or who sincerely believed such a military upheaval as we have just survived and are currently enduring could not occur in a League of Nations world. Even these authors' mistakes provide fascinating evidence of the unpredictability of what lies ahead for all of us.

It is possible to follow through such reading, not only stirring fictional adventure but the development of ideas, some of which have become stf stables, others of which, for various causes, have fallen into disrepute. It is, in short, a key to science fiction history, which is presently flowering into a prevalence and importance seldom foreseen by its struggling pioneers.

[*Turn page*]

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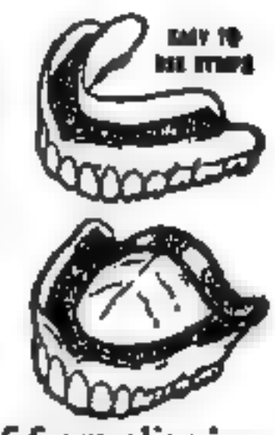

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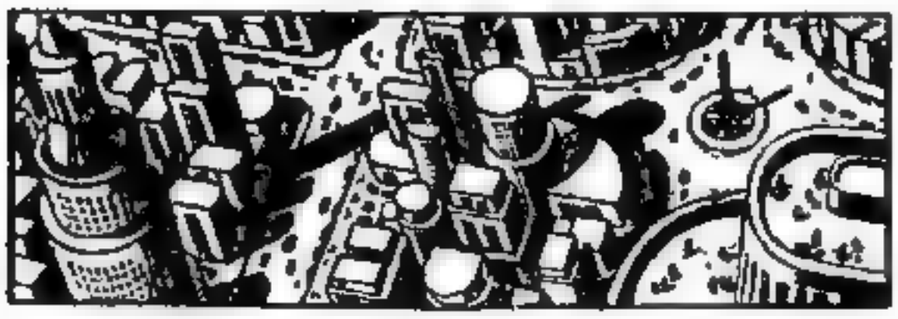

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ON SALE AT ALL STANDS

For modern stf has come along at a tremendous pace of late. Begun some twenty-five-odd years ago by the ubiquitous Hugo Gernsback with his large and lurid gazettes, it has hatched ideas and authors in a steadily widening stream.

It has seen the growth of editors whose originality and courage have prevented it from falling for long into hackneyed paths. It has seen the development of authors of stature, men like Robert A. Heinlein, A. E. van Vogt, Henry Kuttner, Olaf Stapledon, George Orwell and innumerable others, who have found in the medium an instrument for the expression of new ideas and concepts far in excess of more conventional forms.

And now, at last, the public, prodded by both gadgets and fear, has begun to accept science fiction as having at least a speculative connection with the hard facts of daily life.

All this, mind you, in a span of less than a single generation as measured by anthropologists.

Hence the reading of important stories written earlier in the course of this fantastic development is important, not only for the new reader who steps unprepared into a world, or into worlds, many of whose conventions may puzzle him unless he is acquainted with their origins and adaptations, but for the veteran reader to recheck and recall what has happened to stf even while he was reading it.

Furthermore, looking backward, especially when the past is integral to the present and may contain the key to the future is a whale of a lot of fun. For if it is nothing else, science fiction is, as it has always been, entertainment of a high and rare order.

The old wine is still a heady brew, however it is bottled!

OUR NEXT ISSUE

IT is with both pride and pleasure that we announce our forthcoming novel, THE CONQUERORS, by David H. Keller, M.D. For THE CONQUERORS is surely one of the true stf classics from an era which, while number in years as a mere twenty-one, seems to lie almost as far from us today as the heyday of Admiral Dewey or General Grant.

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Dr. Keller, for almost three decades one of the truly distinguished names in science fiction, regards THE CONQUERORS as one of his finest achievements, an opinion with which we whole-heartedly concur. You'll have a chance to judge for yourselves with our Summer edition.

Those of you who hold that women are something comparatively new in stf will have to do some fast backtracking when you read VIA THE HEWITT RAY by M. (for Marion) F. Rupert, who wrote this fine novelet which has the girls taking over in a number of universes, way back in 1930.

We hate to think what might have happened, not only to Scientist John J. Hewitt but to the entire universe, had not his equally brilliant and much better looking daughter, Lucile, disobeyed orders by following him into a series of transdimensional worlds. A swift and exciting satire of high polish and tone.

Of course there will be plenty of other stories, ranging from short short to full length—with two of them taken from our modern inventory by way of making comparisons more intriguing. Don't miss our Summer issue if you want to get the full picture of stf.

LETTERS FROM OUR READERS

THE letters are lively and controversial, so let's get them into print without further ado. We open with—

BORN TO BE CHOKED
By Tom Covington

Dear Editor: Though I'd like to choke you for putting another Bergey cover on the Win-

[*Turn page*]

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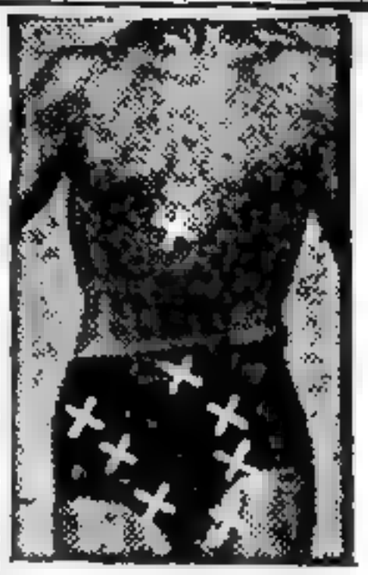

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ter FSQ, and knife you in the back for not printing the names of the interior illustrators, I find myself grateful to you.

The reason—bringing us some good old rootin' tootin' space opera, of course. Science fiction is all right when you feel energetic enough to puzzle the stuff out, but, for peaceful relaxation, give me space opera!

It's really fine to see a little bit of it nowadays when most of the books of a fantastic nature are science fiction. If your other reprint mag, *The Wonder Story Annual*, is like this, let me at it!—315 Dawson Street, Wilmington, North Carolina.

Okay—goody for you, Tom. The oldtimers really liked to pour it on.

OLD WEINBAUM
By Bob Hoskins

Dear Editor: Seems everybody is always wanting to read more of the Weinbaum tales. Most of these are now available in book form and those that aren't are rumored to soon be so. But these books are published only in editions of a few thousand copies, at the most. And only a relative few can afford them.

Therefore many of those who would like to read the Weinbaum stories they've been hearing about are unable to do so. It is my belief that these are the majority of the so-called Weinbaum fans. I have a solution to this that I would like to lay before the readers of FSQ.

It is just this—put out a super-colossal issue devoted to the memory of him. In this publish all of his stories that are available to you at the present. Chances are that two issues would be needed to handle the overflow. Suggested contents for each of the two issues would be:

1. THE BLACK FLAME, Novel, Jan. 39 SS. A MARTIAN ODYSSEY, Novelet, July 34 WS. PYGMALION'S SPECTACLES, Short, June 35 WS. WORLDS OF IF, Short, Aug. 35 WS.

2. DAWN OF FLAME, Short Novel, June 39 TWS. VALLEY OF DREAMS, Novelet, Nov. 34 WS. THE POINT OF VIEW, Short, Feb. 36 WS. TIDAL MOON, Short, Dec. 38 TWS.

The rest of the two issues could be taken up by other of the better shorts from the past, and articles on Weinbaum. An article suggestion would be a biographical sketch of Weinbaum. Or maybe you could reprint "A Tribute to Weinbaum," by Otto Binder, which appeared in the June, '39, TWS.

This is just my own idea. But I would be extremely interested in hearing the opinions of other fans. I think it is something that would go over with a bang. Anyhow, I hope you will consider it something worth looking into.—Lyons Falls, New York.

It's an idea, Bob, certainly one that rates serious consideration. And while we're at

it, what about the same author's THE BRINK OF INFINITY, THE CIRCLE OF ZERO, not to mention THE IDEAL? There is just one factor which might mitigate against such an issue at present—the fact that we have run most of these stories quite recently in the STARTLING STORIES Hall of Fame—and one of them just last year in the opening issue of FSQ. Let's hear from some more of you on this.

SUGGESTIONS
By Bob Silverberg

Dear Editor: The fourth FSQ arrived here yesterday . . . and a fine issue it is. So far, you've picked the most "modern" of the old novels—but I fear you've made a sad mistake in VANDALS OF THE VOID. Why print such tripe when there are so many fine novels lying around?

As an example, how about the Binder classic, DAWN TO DUSK? Or STONE FROM THE MOON and SHOT INTO INFINITY and ELECTROPOLIS, all novels from early Quarterlies? Or some of the serials . . . THE TIME STREAM; BROOD OF HELIOS; THE GREEN MAN OF GRAYPEG? Doubtless these three are on the books for near publication, since they're among the best of the old Gernsback stories.

I needn't suggest any short stories, since they're all of an equally low calibre. But on the subject of shorts . . . the Russell yarn, no matter how good, should not have been reprint—nor anything else after April, 1936.

By 1955, the early TWS, SS, CF yarns will be 15 to 18 years old and darned hard to find . . . and therefore worthy of reprint. Why not wait until then?—760 Montgomery Street, Brooklyn 13, New York.

Because we are trying to run the best available stories of ten years' vintage or more, Robert, that's why. Don't forget, the SS HoF drained the best of the older novelets and short stories. As for jumping on VANDALS before it appears—well, why not give it another try? We found it mighty good reading. [*Turn page*]

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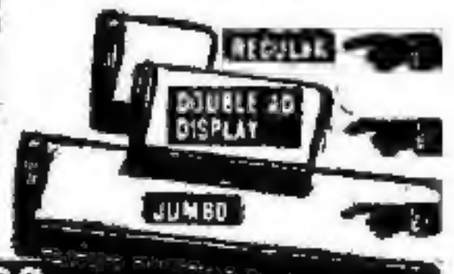

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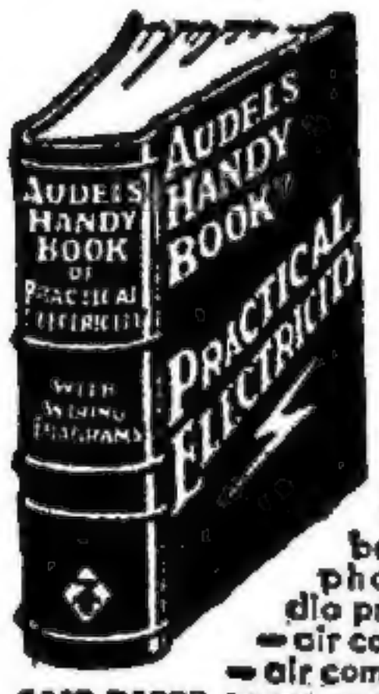

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Most of the novels you suggest have been perused and are either under consideration, have been rejected as below par or have already seen book publication. However, don't give up the ship. And take a look at WONDER STORY ANNUAL for 1951, which will hit the standards early next month. We are running Manly Wade Wellman's TWICE IN TIME as the lead novel and think it one of the finest of the older crop of stories.

SHOCKED
By Edward Wood

Dear Editor: I was sadly shocked to see how the story "Enslaved Brains" by Eando Binder was cut and edited by you. Of course I do not refer to inserting bits of history like WORLD WAR II, KOREA, to bring it up to date. Yet if you must transpose incidents, chapters, etc., such facts should be set forth in a note so that readers will know that they are *not* reading the same idential story as the one which appeared in some earlier issue.

Since I have read most of the stories you are reprinting, I'm interested in seeing which stories are most asked for. Certainly the readers will want more of Clark Ashton Smith and Eando Binder. The latter's "Dawn to Dusk" (Nov., Dec., 24, Jan. '35) is one of the best stories he ever did.

If an ANNUAL for '51 is planned I'm sure that "The Time Stream" by John Taine (Dec., '31-Mar., '32) would make a wonderful lead novel. Consider the high prices being asked for the out of print book copy of this story. —31 North Aberdeen Street, Chicago 7, Illinois.

We transposed no chapters nor anything else in the Binder novel in question, Brother Wood. As for the bringing up to date, well, it does make the story more readable at present without altering it a whit where it counts. We'll look in DAWN TO DUSK. As for THE TIME STREAM, alack, we'll have to lay off it awhile longer because of the book publication and a slight copyright involvement. But Wellman's TWICE IN TIME is not so bad for the '51 ANNUAL.

Which brings us to final curtain for this trip. You can find our readers and ourselves at greater length in the current (April) issue of THRILLING WONDER STORIES, as well as in STARTLING STORIES for May. Then we'll be back at this stand once more. Until then—

THE EDITOR.

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